

Fuel System

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PART 23-01 General Fuel System Service

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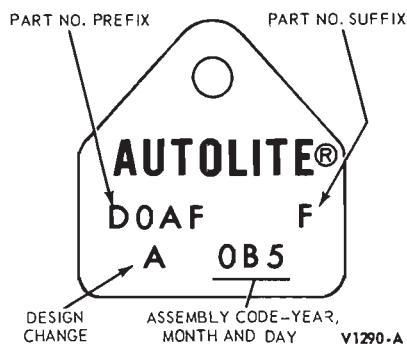


FIG. 1—Typical Carburetor Identification Tag

The 1970 Ford Motor Company car engines are equipped with positive closed-type crankcase ventilation and

exhaust emission systems to aid in the control of engine emissions so they will operate within Government specifications.

Any modification of the fuel system on exhaust emission engines is subject to the penalties of Federal law if made prior to the first sale and registration, and may be subject to penalties under the laws of some states if made thereafter.

To maintain the specified exhaust emission levels, the carburetor as well as other engine system components must be kept in good operating condition and adjusted to specifications.

This part covers the general fuel system performance specifications and adjustment procedures most commonly required within the fuel system. In

addition, removal and installation and cleaning and inspection of the air cleaner, carburetor and fuel pump are included.

For other fuel system adjustments, component disassembly, assembly and repair procedures, refer to the pertinent part of this manual.

The carburetor identification tag is attached to the carburetor. The basic part number for all carburetors is 9510. To procure replacement parts, it is necessary to know the part number prefix and suffix and, in some instances, the design change code (Fig. 1).

Always refer to the Master Parts list for parts usage and interchangeability before replacing a carburetor or a component part for a carburetor.

1 PERFORMANCE SPECIFICATIONS

FUEL									
GENERAL				IGNITION					
	Curb Idle RPM	Fast Idle RPM	Spark Plugs	Distributor	Initial Ignition Timing (BTDC)	Idle Air Fuel Ratio	Anti-Stall Dashpot Clearance	Automatic Choke Setting	Pump Setting
Engine CID	Manual	Auto	Manual	Auto	Point Gap	No.	Dwell Angle	Manual	Auto
170 1-V Six with air cond.	750	550	BF-82		14.45		7/64"	1-Rich	Index
200 1-V Six with air cond.	800	600	BF-42 BTF-6	①	14.45	14.20		—	—
240 1-V Six with air cond.	800	600	BF-42 BTF-6	①	14.70	7/64"	Index	1-Lean	—
250 1-V Six with air cond.	750/500	550	BF-42	①	14.20	7/32"	Solenoid	1-Rich	0.400" From Closed Throttle
302 2-V V-8 with air cond.	800/500	575	BF-82		12.05	1/8"	Solenoid	1-Rich	No. 3 Hole Lever-inboard
302 4-V BOSS ①	800/500	—	BF-42	①	13.50	—	—	—	—
351 C 2-V V-8 with air cond.	700/500	600	AF-32		—	—	—	—	—
351 C 4-V V-8 with air cond.	800/500	600	AF-42		12.90	11.40	Solenoid	Index	No. 4 Hole Lever-inboard
351 W 2-V V-8 with air cond.	700/500	575	AF-32	①	13.15	12.20	Solenoid	0.080"	0.425" ($\pm 0.020"$) Pump Stem Height
390 2-V V-8 with air cond. Police	750/500	575	BF-42	①	12.05	12.80	Solenoid	2-Lean	No. 3 Hole Lever-inboard
428 4-V V-8 with air cond.	725	675	AF-32	①	13.33	12.20	Solenoid	1-Rich	No. 3 Hole Lever-inboard
428 4-V V-8 Cobra Jet	725/500	675/500	BF-32	①	—	—	—	2-Rich	0.560" ($\pm 0.020"$) Pump Stem Height
429 2-V V-8 Super Cobra Jet	725/500	675/500	BF-32	①	—	—	—	—	0.015" (Minimum) Override Spring Adj.
429 4-V V-8 Cobra Jet	700	650	BF-42 BRF-42	①	13.80	0.140" 0.200"	Solenoid	—	—
429 4-V V-8 Super Cobra Jet	650/500	700/500	AF-32	①	—	0.140" 0.200"	Solenoid	—	—
429 4-V V-8 Police and Taxi	700/500	—	BF-42	①	12.20	1/8"	Solenoid	2-Rich	No. 3 Hole Lever-inboard
460 4-V V-8	—	600	BF-42	①	12.65	12.80	0.070"	Index	0.480 $\pm 0.020"$. 0.425 $\pm 0.020"$ Pump Stem Height

① Headamps on Hi-Beam-Air Conditioning OFF (if equipped)
 ② Higher rpm, solenoid energized-lower rpm, solenoid de-energized
 ③ Single diaphragm distributor-0.017" point gap and 26°-31° dwell angle
 ④ Thunderbird
 ⑤ Throttle Plate Clearance
 ⑥ Police and Taxi

FIG. 2—Performance Specifications—Fuel System

2 PERFORMANCE ADJUSTMENTS

The adjustments described and illustrated in this part should be performed as required to help maintain the exhaust emission control as specified by Government regulations and to retain the desired engine performance characteristics. Refer to the Performance Specifications whenever carburetor adjustments are made.

The following adjustments are similar for all carburetors; only the

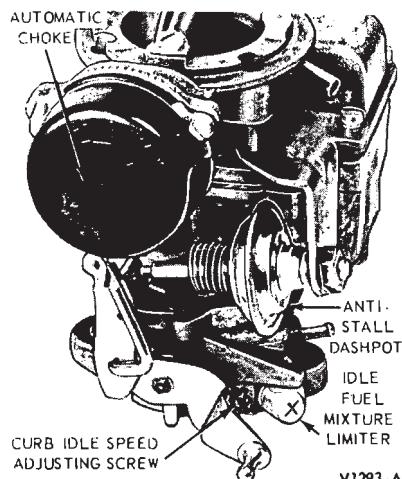


FIG. 3—Carburetor Adjustments—Carter Model YF 1-V

location of the adjustment points vary. Refer to Parts 02 through 07 in this Group for other adjustment and repair procedures on specific carburetor models.

IDLE SPEED AND FUEL MIXTURE

All carburetors on engines manufactured for use in the U.S. are equipped with idle fuel mixture adjusting limiters. The limiters control the maximum idle richness and help prevent unauthorized persons from making overly rich idle adjustments.

The plastic idle limiter cap is installed on the head of the idle fuel mixture adjusting screw(s), (Figs. 3 through 8). Any adjustment made on carburetors having this type of limiter must be within the range of the idle adjusting limiter. Under no circumstances are the idle adjusting limiters or the limiter stops on the carburetor to be mutilated or deformed to render the limiters inoperative. On the Autolite model 2100-D 2-V carburetor, the power valve cover must be installed with the limiter stops on the cover in position to provide a positive stop for tabs on the idle adjusting limiters (Fig. 5).

A satisfactory idle should be ob-

tainable within the range of the idle adjusting limiters, if all other engine systems are operating within specifications.

At pre-delivery, follow the Normal Idle Fuel Settings for both Engine Off and Engine On and in Step 1 of Additional Idle Speed and Fuel Mixture Procedures. Other fuel system adjustments should not be required at pre-delivery service.

Following are the normal procedures necessary to properly adjust the engine idle speed and fuel mixture. The specific operations should be followed in the sequence given whenever the idle speed or idle fuel adjustments are made.

In isolated cases, a satisfactory idle condition may not be achieved by performing the normal procedures. If this occurs, refer to Additional Idle Speed and Fuel Mixture Procedures.

NORMAL IDLE FUEL SETTINGS—ENGINE OFF

- Set the idle fuel mixture screw(s) and limiter cap(s) to the full-counterclockwise position of the limiter cap(s) as illustrated in Fig. 2.

On export vehicles not equipped with exhaust emission control systems, establish an initial idle mixture screw setting by turning each screw inward until it is lightly seated; then turn it outward 1-1/2 turns. Do not turn the screws tightly against the screw seat, as this may damage the end of the screw. If the screw end is damaged, it must be replaced before a satisfactory adjustment can be obtained.

- Back off the curb idle speed ad-

IDLE ADJUSTING LIMITERS

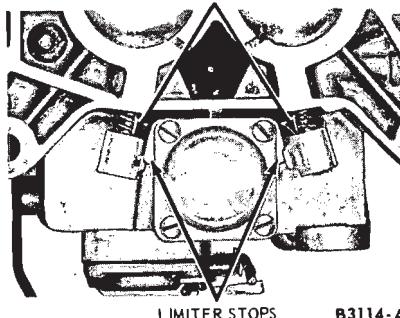


FIG. 5—Autolite Model 2100-D 2-V Idle Fuel Mixture Adjusting Limiters and Limiter Stops—Bottom

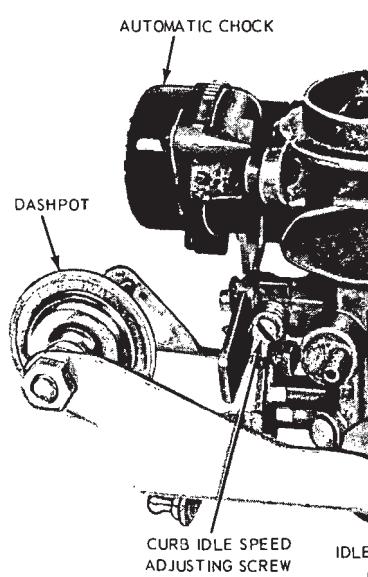


FIG. 4—Carburetor Adjustments—Carter Model RBS 1-V

justing screw (Fig. 9) until the throttle plate(s) seat in the throttle bore(s).

3. Be sure the dashpot or solenoid throttle positioner (if so equipped) is not interfering with the throttle lever (Fig. 10).

It may be necessary to loosen the dashpot or solenoid to allow the throttle plate(s) to seat in the throttle bore(s).

4. Turn the idle speed adjusting

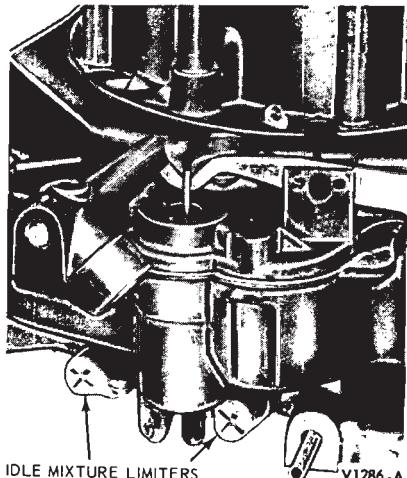


FIG. 6—Idle Fuel Mixture Adjusting Limiters—Autolite 4300 4-V

screw inward until it just makes contact with the screw stop on the throttle shaft and lever assembly. Then, turn the screw inward 1 1/2 turns to establish a preliminary idle speed adjustment (Fig. 9).

5. Set the parking brake while making idle mixture and speed adjustments. On a vehicle with a vacuum release parking brake, remove the vacuum line from the power unit of the vacuum release parking brake assembly. Plug the vacuum line, then set the parking brake. The vacuum power unit must be deactivated to keep the parking brake engaged when the engine is running with the transmission in Drive.

NORMAL IDLE FUEL SETTINGS—ENGINE ON

1. The engine and underhood temperatures must be stabilized before idle adjustments are made. Run the engine a minimum of 20 minutes at 1500 rpm. This can be done by positioning the fast idle screw or cam follower on the kickdown step of the fast idle cam (Figs. 11 through 14).

2. Check the initial ignition timing and the distributor advance and retard as described in Part 22-01. Use an accurate-reading tachometer and

timing light when checking the initial ignition timing and idle fuel mixture and speed.

3. On vehicles with a manual-shift transmission, the idle setting must be made only when the transmission is in Neutral.

On vehicles with an automatic transmission, the idle setting is made with the transmission selector lever in the Drive range, except as noted when using an exhaust gas analyzer.

4. Be sure the choke plate is in the full-open position.

5. On carburetors equipped with a hot idle compensator, be sure the compensator is seated to allow for proper idle adjustment (Fig. 15).

6. Turn the headlights on high beam to place the alternator under a load condition in order to properly adjust to the specified engine idle speed.

7. The final idle speed adjustment is made with the air conditioner (if equipped) turned OFF.

8. Adjust the engine curb idle rpm to specifications. The tachometer reading (rpm) must be taken with the air cleaner installed. On vehicles with less than 50 miles, set the idle speed approximately 25 rpm below specifications to allow for an rpm increase as the engine loosens up in the first 100 miles of driving.

If it is not possible to adjust the idle speed with the air cleaner installed; remove it, make the adjustment, then replace the air cleaner and check again for the specified rpm.

On the Autolite 2-V and Rochester 4-V carburetors equipped with a solenoid throttle positioner, turn the solenoid assembly in or out of the bracket

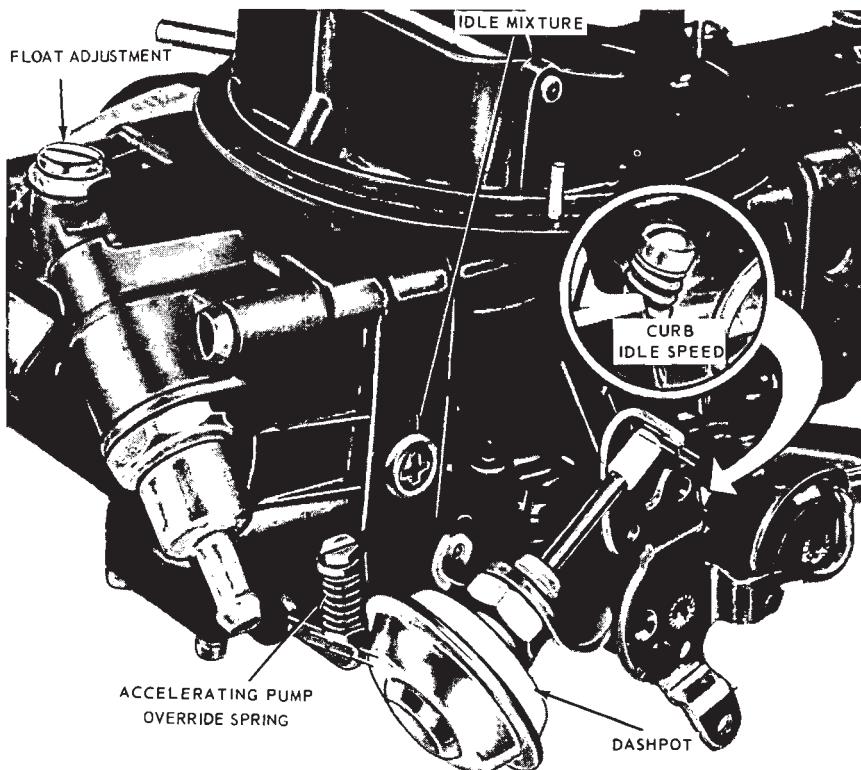


FIG. 7—Carburetor Adjustments—Holley Model 4150-C 4-V

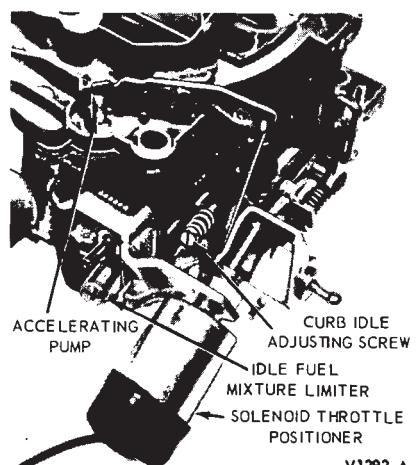
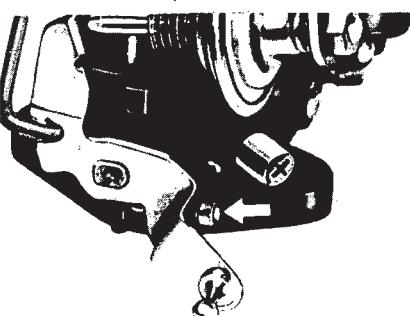
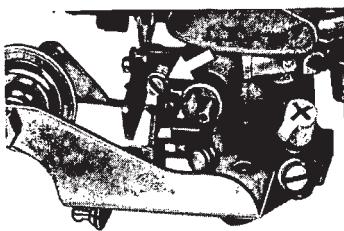


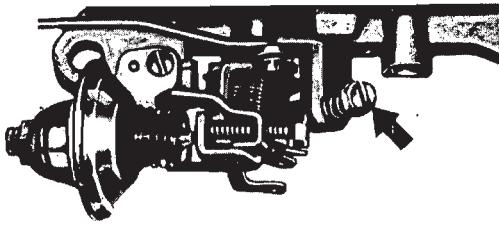
FIG. 8—Carburetor Adjustments—Rochester Quadrajet Model 4MV



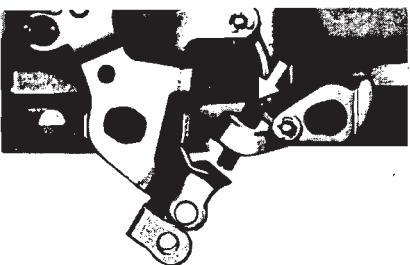
CARTER MODEL YF 1-V



CARTER MODEL RBS 1-V



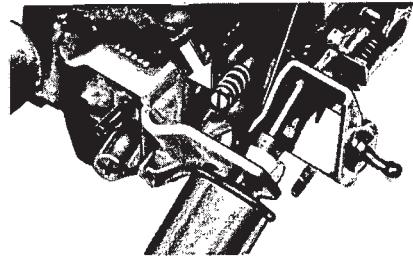
AUTOLITE MODEL 2100-D, 2-V



AUTOLITE MODEL 4300 4-V



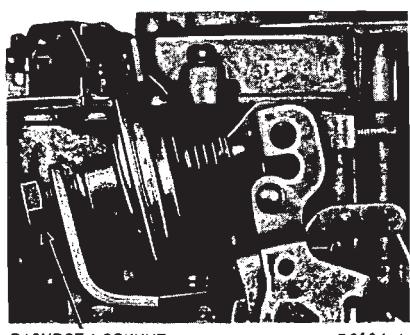
HOLLEY MODEL 4150C 4-V



ROCHESTER MODEL 4 MV

V1288-A

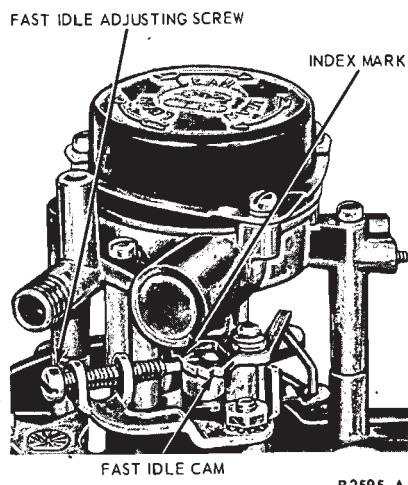
FIG. 9—Curb Idle Speed Adjusting Screws



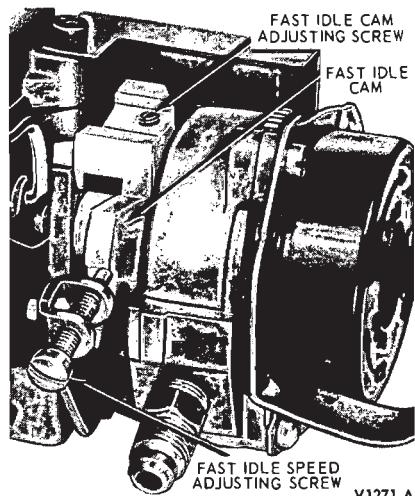
DASHPOT LOCKNUT

B3134-A

FIG. 10—Dashpot—Typical Installation



B2595-A



V1271-A

et to obtain the specified curb idle rpm, then tighten the lock nut. Disconnect the solenoid lead wire at the bullet connector, then adjust the carburetor throttle stop screw to obtain 500 rpm. Connect the solenoid lead wire and open the throttle slightly by hand. The solenoid plunger will follow the throttle lever and remain in the fully extended position as long as the ignition is on and the solenoid is energized.

On the Carter 1-V, Autolite 4-V and Holley 4-V carburetors equipped with a solenoid throttle positioner (Fig. 16), turn the solenoid plunger screw in or out to obtain the specified curb idle rpm. Disconnect the solenoid lead wire at the bullet connector near the loom, then adjust the carburetor throttle stop screw to obtain 500

FIG. 11—Fast Idle Speed Adjustment—Autolite Model 2100-D 2-V

rpm. Connect the solenoid lead wire and open the throttle slightly by hand. The solenoid plunger will follow the throttle lever and remain in the fully extended position as long as the ignition is on and the solenoid is energized.

9. Turn the idle mixture adjusting screw(s) inward to obtain the smoothest idle possible within the range of the idle limiter(s).

On 2- and 4-venturi carburetors, turn the idle mixture adjusting screws inward an equal amount.

Check for idle smoothness only with the air cleaner installed.

FIG. 12—Fast Idle Speed Adjustment—Autolite Model 4300 4-V

ADDITIONAL IDLE SPEED AND FUEL MIXTURE PROCEDURES

If a satisfactory idle condition is not obtained after performing the preceding normal idle fuel settings, additional checks of engine systems must be performed.

1. The following items should be checked and, if required, corrected.

a. Vacuum leaks (Refer to the Wiring and Vacuum Diagrams Manual Form 7795P-70 for vacuum schematic diagrams and the locations of

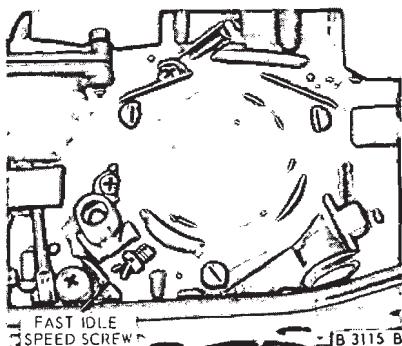


FIG. 13—Fast Idle Speed Adjustment—Holley Model 4150-C 4-V

the vacuum lines).

- b. Ignition system wiring continuity
- c. Spark plugs
- d. Distributor breaker point dwell angle
- e. Distributor point condition
- f. Initial ignition timing

In certain instances, it may be possible that the idle condition is not as good as normally expected. It is suggested that the customer with a new vehicle be advised that the vehicle be driven 50 to 100 miles. Then, when the engine friction has been reduced, the idle condition should be improved. If, after the break-in period, the idle condition is believed to be unsatisfactory, readjust the engine idle speed to specification and observe for a satisfactory idle.

2. If the idle condition is not improved after the items in Step 1 have been checked, perform the following engine mechanical checks:

- a. Fuel Level
- b. Crankcase ventilation system
- c. Valve clearance (using the collapsed tappet method for hydraulic valves)
- d. Engine compression
- 3. After verification of all engine systems has been made, there may be isolated cases where a satisfactory idle condition has not been obtained, due possibly to a lean idle fuel mixture. If this condition is encountered, check the air-fuel ratio with the aid of an exhaust gas analyzer, and adjust the air-fuel ratio to specifications.

USE OF THE EXHAUST GAS ANALYZER

The use of the exhaust gas analyzer is recommended only after the Normal Fuel Setting Procedures and Additional Idle Speed and Fuel Mixture Procedures have been performed and

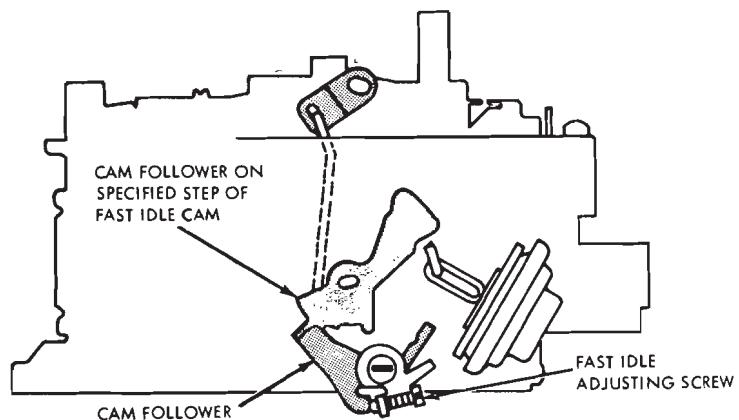


FIG. 14—Fast Idle Speed Adjustment—Rochester Model 4 MV

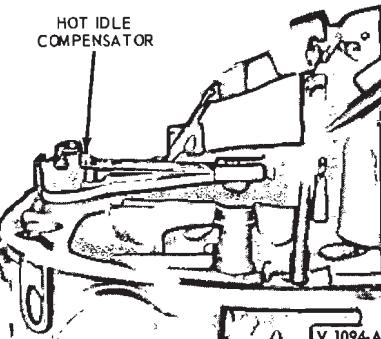


FIG. 15—Hot Idle Compensator

the engine condition is still not satisfactory.

1. Connect a Rotunda Model ARE 27-56 U or 76 Exhaust Gas Analyzer, or equivalent A/C-powered unit, in accordance with instructions provided by the manufacturer. All exhaust gas analyzers must be checked for proper calibration. Rotunda analyzers must have Certified Calibration identification on the face of the instrument.

2. On a Thermactor-equipped vehicle, disconnect the Thermactor pump air supply hose at the air pump or the check valve(s). Do not adjust for the drop in engine idle speed, which occurs when the air supply hose is disconnected. Note the amount of rpm drop for use in step 4.

3. Observe the reading obtained on the exhaust gas analyzer. The analyzer reading must be taken with the air cleaner installed. Refer to the specifications for the specified minimum air-fuel ratio.

4. Turn the idle mixture adjusting screw(s) as required within the range of the idle limiter until the specified air-fuel ratio is obtained (on 2- and 4-V carburetors, turn the screws an

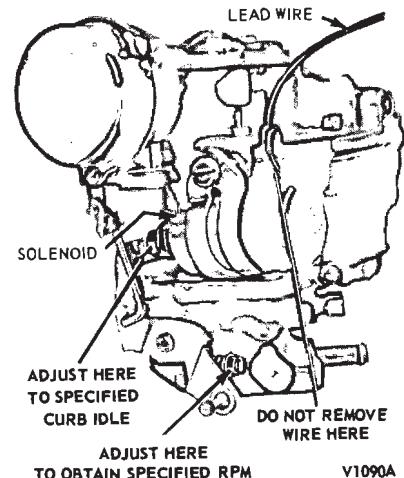


FIG. 16—Carter Model YF 1-V With Solenoid Throttle Positioner

equal amount). The analyzer reading must be obtained with the air cleaner installed. Correct for any changes in engine idle speed immediately as the idle mixture screw(s) are turned. (Refer to the drop in idle rpm obtained when the Thermactor air pump hose(s) were disconnected in step 2, then correct the idle speed to the rpm noted.) Allow at least 10 seconds following each idle mixture screw adjustment for the analyzer reading to properly respond and stabilize.

Verify the analyzer reading. Thermal conductivity exhaust gas analyzers will give an erroneously rich reading if the air-fuel mixture is extremely lean. To check for this condition, partially hand choke the carburetor, or rapidly open-and-close the throttle three or four times, to enrich the air-fuel mixture. The analyzer meter will reflect the momentary rich condition, then will deflect in the lean direction as the rich condition subsides, and

will gradually return to a richer reading as the excessively lean air-fuel ratio is produced. Vehicles with an automatic transmission must be in Neutral while this is being done.

5. If the air-fuel ratio is to specifications, and the various engine systems are functioning correctly, no further adjustments should be made.

If the air-fuel ratio is not to specifications, as shown by the analyzer reading, it may be corrected by altering the controlled limits of the carburetor idle fuel system. Refer to Removal and Installation of Idle Limiter Caps.

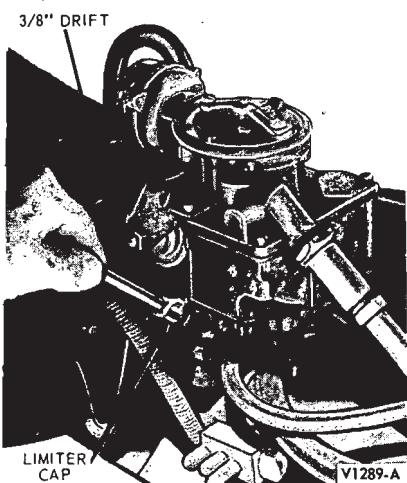


FIG. 17—Idle Limiter Installation—Carter Carburetors

REMOVAL AND INSTALLATION OF IDLE LIMITER CAPS

1. Remove the plastic limiter caps by cutting with side-cutter pliers and knife. After the cut is made, carefully pry the limiter apart. On some carburetors, it may be necessary to remove the carburetor to remove the limiter.

On Holley carburetors, pry the caps off with a screwdriver.

2. After the limiters are removed, set the carburetor to the correct idle air-fuel ratio, using the exhaust gas analyzer.

3. When the idle air-fuel ratio is within specifications, install a colored plastic service limiter cap.

When installing the limiter cap (Figs. 17 and 18), use care not to turn the idle mixture screw with the cap. Position the cap so that it is in the maximum counterclockwise position with the tab of the limiter against the stop on the carburetor.

The idle mixture adjusting screw will then be at the maximum allowable outward, or rich, setting.

To install the service limiter cap, use a straight, forward pushing force with thumb pressure or a 3/8-inch drift or socket wrench extension.

4. Recheck the air-fuel ratio with the air cleaner installed, using the exhaust gas analyzer to make sure the limiter caps are properly installed.

FAST IDLE ADJUSTMENT

The fast idle adjusting screw (Figs. 11 through 14) contacts one edge of the fast idle cam. The cam permits a faster engine idle speed for smoother running when the engine is cold during choke operation. As the choke plate is moved through its range of travel from the closed to the open position, the fast idle cam pick-up lever rotates the fast idle cam. Each position on the fast idle cam permits a slower idle rpm as engine temperature rises and choking is reduced.

Make certain the curb idle speed and mixture are adjusted to specification before attempting to set the fast idle speed.

1. With the engine operating temperature normalized (hot), air cleaner removed and the tachometer attached, manually rotate the fast idle cam until the fast idle adjusting screw rests on the specified step of the cam.

2. Turn the fast idle adjusting screw inward or outward as required to obtain the specified fast idle rpm.

CARTER MODEL YF 1-V

The carburetor must be removed from the engine to check or correct the fast idle speed adjustment.

1. Open the throttle plate and hold the choke plate fully closed to allow the fast idle cam (Fig. 19) to revolve

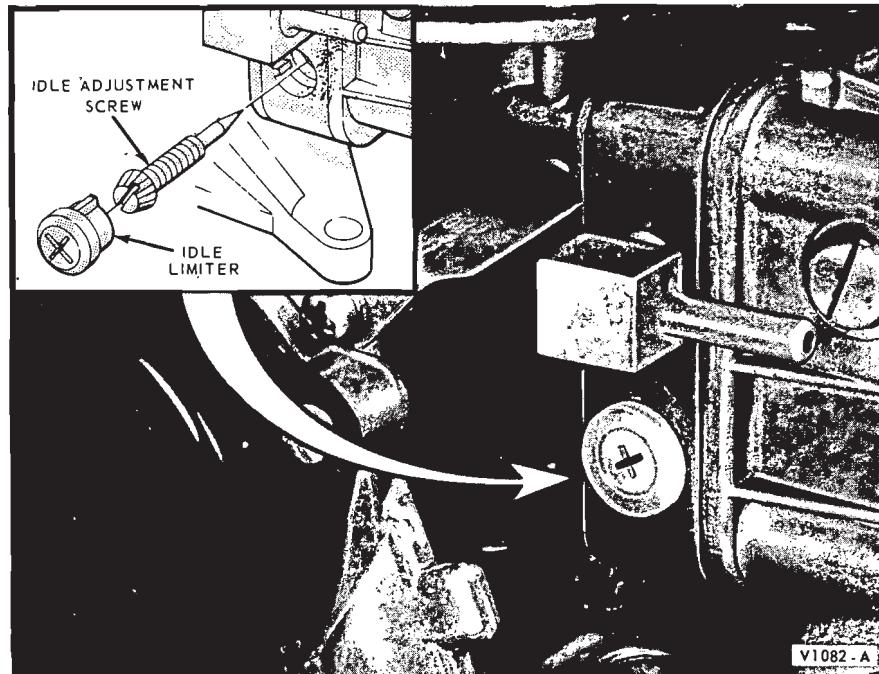


FIG. 18—Idle Limiter Installation—Holley 4150-C 4-V

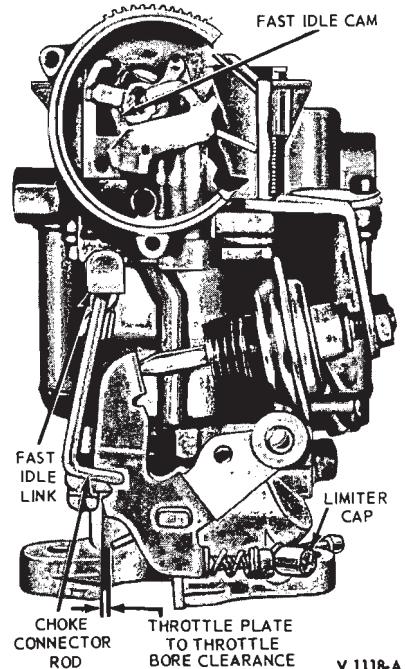


FIG. 19—Fast Idle Speed Adjustment—Carter Model YF 1-V

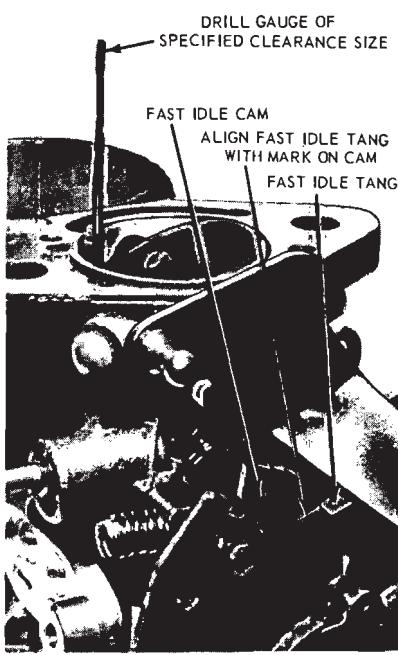


FIG. 20—Throttle Plate Clearance—Carter Model RBS 1-V

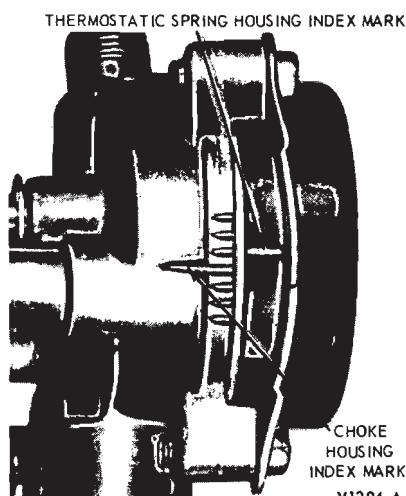


FIG. 22—Automatic Choke Thermostatic Spring Housing Adjustment

rod in a direction to open or close the throttle as required.

CARTER MODEL RBS 1-V

The fast idle speed is determined by the fast idle linkage setting and the specified throttle plate clearance.

The carburetor must be removed from the engine to check or correct the fast idle throttle plate clearance speed adjustment.

Fast Idle Linkage

1. Fully close the choke plate.
2. Align the fast idle tang on the throttle lever with the index mark on the fast idle cam.
3. At this position, the choke connector rod end should be at the top end of the slot in the fast idle cam. To adjust, bend the choke connector rod at the offset portion as required.

Throttle Plate Clearance

1. Align the fast idle tang on the throttle lever with the index mark on the fast idle cam. Use a drill with a diameter equal to the specified clear-

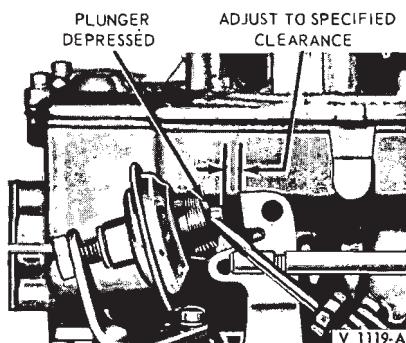


FIG. 21—Typical Anti-Stall Dashpot Adjustment

to the fast idle position.

2. Close the throttle and use a drill with a diameter equal to the specified clearance to check the clearance between the throttle plate and throttle body bore (Fig. 19). To adjust the clearance, bend the choke connector

ance between the throttle plate and the throttle bore at the idle port side to check the clearance (Fig. 20).

2. To adjust for the specified clearance, bend the tang on the throttle lever to increase or decrease the throttle plate clearance as required.

ANTI-STALL DASHPOT

1. With the engine idle speed and mixture properly adjusted, and the engine at normal operating temperature, loosen the anti-stall dashpot lock nut (Fig. 21).

2. Hold the throttle in the closed position and depress the plunger with a screwdriver blade. Measure the clearance between the throttle lever and the plunger tip. Turn the anti-stall dashpot in a direction to provide the specified clearance between the tip of the plunger and the throttle lever. Tighten the locknut to secure the adjustment.

AUTOMATIC CHOKE THERMOSTATIC SPRING HOUSING ADJUSTMENT

The automatic choke has an adjustment to control its reaction to engine temperature. By loosening the clamp screws that retain the thermostatic spring housing to the choke housing, the spring housing can be turned to alter the adjustment. Refer to the specifications for the proper setting.

1. Remove the air cleaner assembly, heater hose and mounting bracket (if so equipped) from the carburetor.

2. Loosen the thermostatic spring housing clamp retaining screws. Set the spring housing to the specified index mark (Fig. 22) and tighten the clamp retaining screws.

3. If other carburetor adjustments are not required, install the heater hose and mounting bracket (if so equipped) and the air cleaner assembly on the carburetor.

3 REMOVAL AND INSTALLATION

AIR CLEANER AND FILTER ELEMENT

REMOVAL

1. Disconnect the vacuum hose

from the auxiliary air inlet valve vacuum control motor (if so equipped).

Disconnect the carbon canister purge tube (Fig. 23) on vehicles equipped with a carbon canister fuel evaporative emission system.

2. Disconnect the crankcase ventilation system hose from the air cleaner or at the valve cover. Loosen the clamp that secures the exhaust shroud tube to the air intake duct (if so equipped).

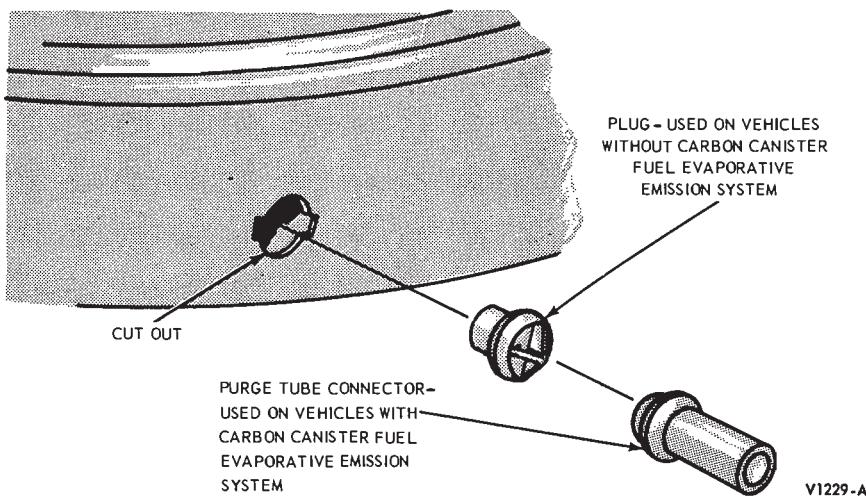


FIG. 23—Connection for Carbon Canister Purge Tube

- Remove the wing bolt or nut retaining the air cleaner to the carburetor. On 351C V-8 engines raise the air cleaner assembly and disconnect the vacuum source hose at the bi-metal control valve. Remove the air cleaner and the air intake duct and valve assembly from the carburetor as a unit.

- Remove the air cleaner cover and filter element from the air cleaner body.

- Inspect the air cleaner-to-carburetor mounting gasket. On the Ram Air system, inspect the hood-to-air cleaner seal for all-around contact. Replace the gasket or seal if it is worn or damaged.

INSTALLATION

- Install a new air cleaner to carburetor mounting gasket, if required.

On all 2V carburetor applications, torque the air cleaner mounting stud to specification.

- Position the air cleaner and air intake duct and valve assembly on the carburetor and shroud tube. On the 351C V-8 engine, connect the vacuum source hose at the bi-metal control valve. Secure the clamp attaching the shroud to the air duct (if so equipped).

- Install a new filter element in the air cleaner body, if required. If the word TOP is indicated on the filter element, make sure the word TOP faces upward. Make sure the filter element is properly seated. Install the air cleaner cover and retaining wing nut or screw.

On vehicles with six cylinder engines be sure the hump in the air cleaner cover is installed over the hump in the cleaner body to prevent interference.

- Connect the crankcase ventila-

tion system hose to the air cleaner body or at the valve cover.

- Connect the vacuum hose to the vacuum control motor (if so equipped).

Connect the carbon canister purge tube (Fig. 22) on vehicles equipped with a carbon canister fuel evaporative emission system.

HOT AND COLD AIR INTAKE DUCT AND VALVE ASSEMBLY

REMOVAL

- Remove the retaining cap screws that secure the air intake duct and valve assembly to the air cleaner.

- Remove the air intake duct and valve assembly from the engine.

INSTALLATION

- Install the air intake duct and valve assembly on the exhaust manifold shroud tube.

- Connect the air inlet duct and valve assembly to the air cleaner and tighten the retaining cap screws.

CARBURETOR

REMOVAL

Flooding, stumble on acceleration and other performance complaints are in many instances, caused by the presence of dirt, water or other foreign matter in the carburetor. To aid in diagnosing the cause of complaint, the carburetor should be carefully removed from the engine without removing the fuel from the bowls. The contents of the bowls may then be examined for contamination as the carburetor is disassembled.

- Remove the air cleaner. Remove the heater hose from the choke shield

(if so equipped).

- Remove the throttle cable or rod from the throttle lever. Disconnect the distributor vacuum line, in-line fuel filter and the choke heat tube at the carburetor.

- Disconnect the choke clean air tube from the air horn.

- Remove the carburetor retaining nuts; then remove the carburetor. Remove the carburetor mounting gasket, spacer (if equipped) and lower gasket, from the intake manifold.

INSTALLATION

- Clean the gasket mounting surfaces of the spacer and carburetor. Place the spacer between two new gaskets and position the spacer and gaskets on the intake manifold. Position the carburetor on the spacer and gasket and secure it with the retaining lockwashers and nuts. To prevent leakage, distortion or damage to the carburetor body flange, snug the nuts; then, alternately tighten each nut in a criss-cross pattern to the specified torque (Part 23-12). On the Rochester carburetor, first tighten a front bolt, then the diagonal rear bolt, then the other front bolt to the other rear bolt.

- Connect the in-line fuel filter throttle cable, choke heat tube, and distributor vacuum line. Position the heater hose behind the choke shield.

- Connect the choke clear air tube to the air horn.

- Adjust the engine idle speed, the idle fuel mixture, anti-stall dashpot (if so equipped) and the accelerating pump stroke (if required). Install the air cleaner.

FUEL FILTER MAINTENANCE

The in-line fuel filters used on all engines are of one-piece construction and cannot be cleaned. Replace the filter at the specified service interval or if it becomes clogged or restricted.

FUEL FILTER REPLACEMENT

- Remove the air cleaner.

- Loosen the retaining clamp securing the fuel inlet hose to the fuel filter.

- Unscrew the fuel filter from the carburetor and discard the gasket (if so equipped). Disconnect the fuel filter from the hose and discard the retaining clamp.

- Install a new clamp on the inlet hose and connect the hose to the filter. Place a new gasket on the new

fuel filter, if so equipped and screw the filter into the carburetor inlet port. Tighten the filter.

5. Position the fuel line hose clamp and crimp the clamp securely.
6. Start the engine and check for fuel leaks.
7. Install the air cleaner.

FUEL PUMP

Removal

1. Disconnect the inlet line and the outlet line at the fuel pump. On the

429 CID Cobra Jet, remove the fuel return line.

2. Remove the fuel pump retaining screws and remove the pump and the gasket. Discard the gasket.

Installation

1. Remove all the gasket material from the mounting pad and pump. Apply oil-resistant sealer to both sides of a new gasket. Position the new gasket on the pump flange and hold the pump in position against the mounting pad. **Make sure the rocker**

arm is riding on the camshaft eccentric.

2. Press the pump tight against the pad, install the retaining screws, and alternately torque them to specifications.

3. Connect the fuel inlet line or hose (use a new clamp on the hose) and the outlet line. If a hose is used at the fuel pump connection, crimp the retaining clamp securely. On the 429 CID Cobra Jet, connect the fuel return line.

4. Operate the engine and check for fuel leaks.

4 CLEANING AND INSPECTION

AIR CLEANER

Refer to the 1970 Car Maintenance and Lubrication Manual for the recommended air cleaner assembly maintenance mileage interval.

Cleaning the air cleaner or crankcase ventilation filter (351C V8 engine) elements is not recommended. They should be replaced at the specified mileage intervals.

Clean the air cleaner body and the cover with a solvent or compressed air. Wipe the air cleaner body and cover dry if a solvent is used. Inspect the air cleaner body and cover for distortion or damage at the gasket mating surfaces. Replace the cover or body if they are damaged beyond repair.

Hold the filter in front of a light and carefully inspect it for any splits or cracks. If the filter is split or cracked, replace it.

CARBURETOR

Dirt, gum, water or carbon contamination in the carburetor or the exterior moving parts of the carburetor are often responsible for unsatisfactory performance. For this reason, efficient carburetion depends upon careful cleaning and inspection.

The cleaning and inspection of only those parts not included in the carburetor overhaul repair kit are covered here. All gaskets and parts included in the repair kit should be installed when the carburetor is assembled and the old gaskets and parts should be discarded.

Wash all the carburetor parts (except the accelerating pump dia-

phragm, the power valve, the secondary operating diaphragm, and the anti-stall dashpot assembly) in clean commercial carburetor cleaning solvent. If a commercial solvent is not available, lacquer thinner or denatured alcohol may be used.

Rinse the parts in kerosene to remove all traces of the cleaning solvent, then dry them with compressed air. Wipe all parts that can not be immersed in solvent with a clean, soft, dry cloth. Be sure all dirt, gum, carbon, and other foreign matter are removed from all parts.

Force compressed air through all passages of the carburetor. **Do not use a wire brush to clean any parts or a drill or wire to clean out any openings or passages in the carburetor.** A drill or wire may enlarge the hole or passage, changing the calibration of the carburetor.

Check the choke shaft for grooves, wear and excessive looseness or binding. Inspect the choke plate for nicked edges and for ease of operation and free it if necessary. Make sure all carbon and foreign material has been removed from the automatic choke housing and the piston. Check the operation of the choke piston in the choke housing to make certain it has free movement.

Check the throttle shafts in the bores for excessive looseness or binding and check the throttle plates for burrs which prevent proper closure.

Inspect the main body, throttle body, air horn, nozzle bars and booster venturi assemblies (2-V and 4-V carburetors), choke housing and thermostatic spring housing, power valve cover and accelerating pump cover for

cracks.

Check metallic float(s) for leaks by holding them under water that has been heated to just below the boiling point. Bubbles will appear if there is a leak. Shake the float to check for the entry of fuel or water. If a float leaks, replace it.

Replace the float if the arm needle contact surface is grooved. If the floats are serviceable, polish the needle contact surface of the arm with crocus cloth or steel wool. Replace the float shafts if they are worn.

Replace all screws and nuts that have stripped threads. Replace all distorted or broken springs.

Inspect all gasket mating surfaces for nicks and burrs. Repair or replace any parts that have a damaged gasket surface.

Inspect the rubber boot of the anti-stall dashpot for proper installation in the groove of the stem bushing. Check the stem movement for smooth operation. Do not lubricate the stem. Replace the assembly if it is damaged.

FUEL PUMP

Clean the fuel pump with a cloth. Inspect the fuel pump for cracks or damage. Inspect the mounting flange for distortion. Inspect the rocker arm spring, pin and the rocker arm for wear, cracks or damage. The rocker arm spring, pin and the rocker arm are the only components on the permanently sealed fuel pumps that are replaceable. If any other fuel pump components are damaged, replace the fuel pump.

PART 23-02 Carter Model YF 1-V Carburetor

The Carter Model YF 1-V Carburetor is used on all Six-Cylinder Engines Except the 250 CID Six			
COMPONENT INDEX	Page	COMPONENT INDEX	Page
ACCELERATING PUMP		FUEL LEVEL FLOAT ADJUSTMENT	02-03
Installation	02-05	LOW SPEED JET	
Removal	02-05	Installation	02-05
AIR HORN TO MAIN BODY GASKET		Removal	02-05
Installation	02-04	MAIN METERING JET	
Removal	02-03	Installation	02-04
CARBURETOR		Removal	02-04
Assembly	02-05	METERING ROD	
Disassembly	02-05	Adjustment	02-03
CHOKE PLATE CLEARANCE AND FAST		Installation	02-05
IDLE CAM ADJUSTMENT	02-02	Removal	02-05
DECHOKE CLEARANCE	02-02	PERFORMANCE ADJUSTMENTS	
FLOAT OR NEEDLE VALVE		SPECIFICATIONS	02-08
REPLACEMENT	02-04		

DESCRIPTION

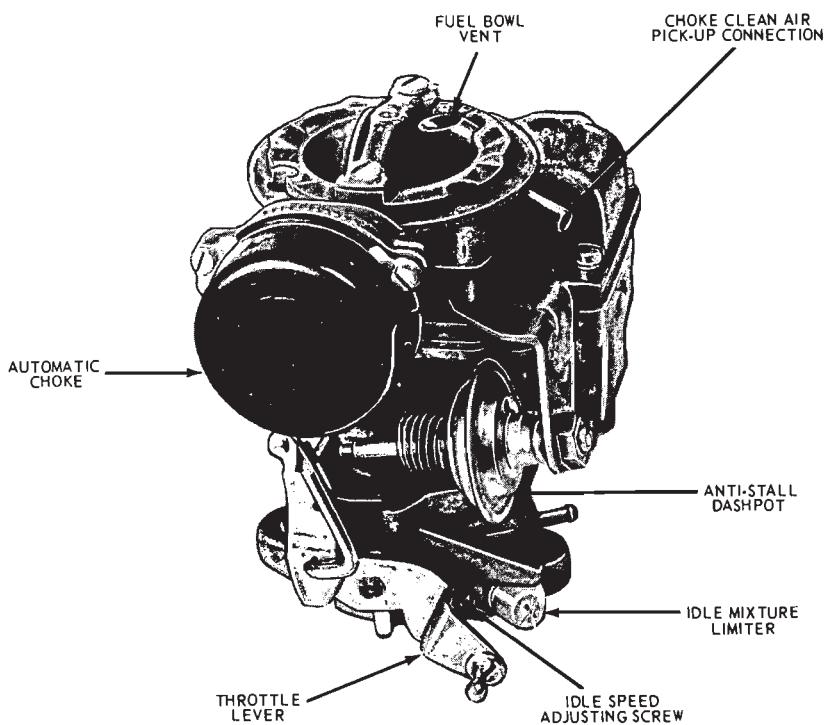
The Carter Model YF 1-V carburetor is made up of three main assemblies: the air horn, the main body and throttle body (Figs. 1 and 2).

The air horn, which serves as the main body cover, contains the choke plate, an internal vent for the fuel bowl, automatic choke thermostatic control and the fuel inlet fitting, inlet needle and seat and the float and lever assembly. The anti-stall dashpot or solenoid throttle positioner is attached to the air horn by means of a bracket.

The Model YF used on the 240 CID Six with a manual transmission is equipped with a solenoid throttle positioner. The solenoid reduces the curb idle rpm by allowing the throttle plate to close further than the normal curb idle position when the ignition is turned off.

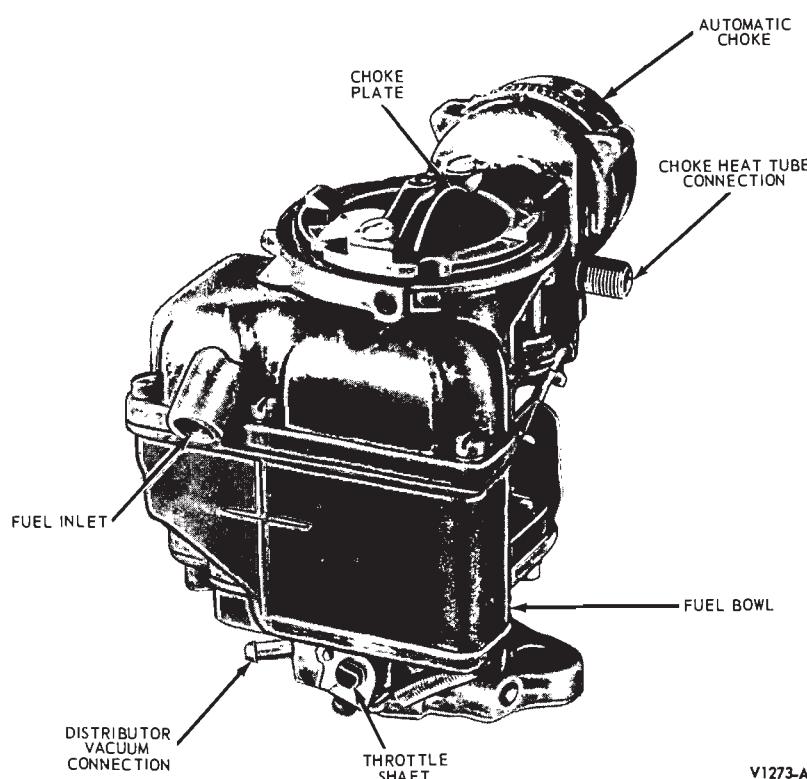
The main body contains the accelerating pump assembly, metering rod jet, low-speed jet, accelerating pump check needle, an anti-percolator bleed and the main discharge nozzle.

The throttle body contains the throttle plate, throttle shaft and lever, idle mixture adjusting screw with a plastic limiter cap, and choke connector rod. Two types of throttle body designs are used for various engine applications. One is cast-iron and the other is aluminum.



V1272-A

FIG. 1—Carter Model YF 1-V Carburetor—Rear View



V1273-A

FIG. 2—Carter Model YF 1-V Carburetor—Left Front View

The engine speed is regulated and controlled by the proportion of fuel and air delivered to the cylinders for all engine operating conditions. Operation is based on the principle of pressure differences or vacuum.

Air is drawn into the carburetor air horn by manifold vacuum. As the air passes through the carburetor on the way to enter the cylinders, low pressure is created at the fuel discharge outlets of the carburetor. The fuel bowl is vented to the carburetor air horn. The high air pressure exerted on the fuel in the bowl forces the fuel to travel up through the fuel discharge channels and out into the air stream passing through the carburetor. The fuel and air is mixed at this point and distributed into the engine cylinders for combustion.

1 IN-VEHICLE ADJUSTMENTS AND REPAIRS

PERFORMANCE ADJUSTMENTS

The following carburetor adjustments are described and illustrated in Part 23-01 of this Group:

Idle Speed and Fuel Mixture

Fast Idle Speed

Anti-Stall Dashpot

Automatic Choke

To enable the vehicle to operate within the range of Government regulations to control engine emissions, the specifications for the adjustments were determined to help provide the most desirable engine performance characteristics. These specifications are contained in Part 23-01 of this Group, and are arranged in chart form for ready reference.

The adjustment and repair procedures described in this part are performed less frequently, and are unique to the Carter Model YF 1-V carburetor. The specifications for these adjustments and other technical data are listed at the end of this Part.

CHOKE PLATE CLEARANCE (PULLDOWN) AND FAST IDLE CAM LINKAGE ADJUSTMENT

1. Remove the air cleaner, then remove the choke thermostatic spring housing from the carburetor. To remove the thermostatic spring housing with the carburetor installed on the engine, refer to Thermostatic Spring Housing and Gasket Replacement.

2. Hold the throttle plate fully open and close the choke plate as far as possible without forcing it. Use a drill of the proper diameter to check the clearance between the choke plate and air horn (Fig. 3.).

3. If the clearance is not within specification, adjust by bending the arm on the choke trip lever. Bending the arm downward will increase the clearance, and bending it upward will decrease the clearance. Always recheck the clearance after making any adjustment.

4. Install the baffle plate, gasket and thermostatic coil housing. Be sure the thermostatic spring engages the tang on the choke lever and shaft assembly.

5. Set the thermostatic choke housing to the specified index mark and tighten the retaining screws.

6. If the choke plate clearance and fast idle cam linkage adjustment was performed with the carburetor on the engine, adjust the engine idle speed and fuel mixture. Adjust the anti-stall dashpot (if so equipped).

DECHOKE CLEARANCE

1. Remove the air cleaner, then remove the choke thermostatic spring housing from the carburetor.

2. Hold the throttle plate fully open and close the choke plate as far as possible without forcing it. Use a drill of the proper diameter to check the clearance between the choke plate and air horn (Fig. 4).

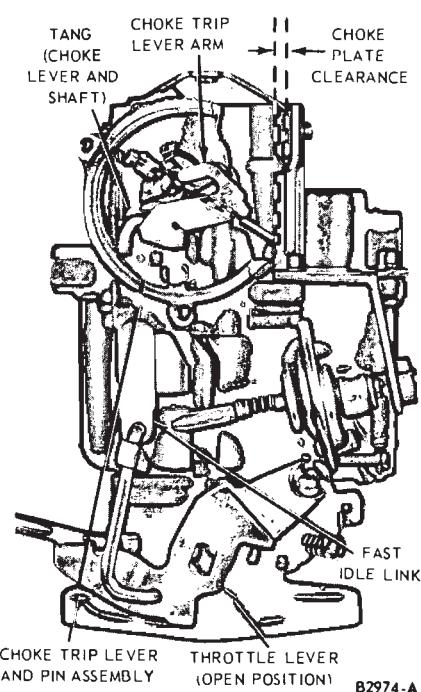


FIG. 3—Choke Plate Clearance Adjustment

3. If the clearance is not within specification, adjust by bending the arm on the choke trip lever. Bending the arm downward will increase the clearance, and bending it upward will decrease the clearance. Always recheck the clearance after making any adjustment.

4. Install the baffle plate, gasket and thermostatic coil housing. Be sure the thermostatic spring engages the tang on the choke lever and shaft assembly.

5. Set the thermostatic choke housing to the specified index mark and tighten the retaining screws.

6. If the choke plate clearance and fast idle cam linkage adjustment was performed with the carburetor on the engine, adjust the engine idle speed and fuel mixture. Adjust the anti-stall dashpot (if so equipped).

METERING ROD ADJUSTMENT

1. Remove the carburetor air horn and gasket from the carburetor.

2. Back out the idle speed adjusting screw until the throttle plate is closed tight in the throttle bore.

3. Press down on the end of the diaphragm shaft until the metering rod arm contacts the lifter link at the diaphragm stem.

4. To adjust the metering rod, hold the diaphragm assembly as in Step 3, then, turn the rod adjustment screw

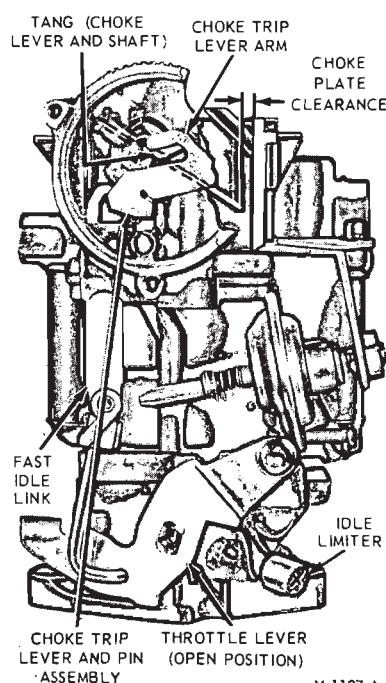


FIG. 4—Dechoke Clearance Adjustment—Carter Model YF 1-V

(Fig. 5) until the metering rod just bottoms in the body casting.

5. Turn the metering rod adjustment screw in (clockwise) one additional turn for the final adjustment.

6. Install the carburetor air horn and a new gasket on the carburetor.

FUEL LEVEL FLOAT ADJUSTMENT

The dry float fuel level adjustment is a final float or fuel level adjustment.

1. Remove the carburetor air horn and gasket from the carburetor. Refer to Air Horn to Main Body Gasket Replacement for the proper procedure.

2. Fabricate a float level gauge (Fig. 6) to the specified float level dimension.

3. Invert the air horn assembly, and check the clearance from the top of the float to the bottom of the air horn with the float level gauge (Fig. 6). Hold the air horn at eye level when gauging the float level. The float arm (lever) should be resting on the needle pin. Bend the float arm as necessary to adjust the float level (clearance). Do not bend the tab at the end of the float arm; it prevents the float from striking the bottom of the fuel bowl when empty.

4. Install the carburetor air horn and a new gasket on the carburetor.

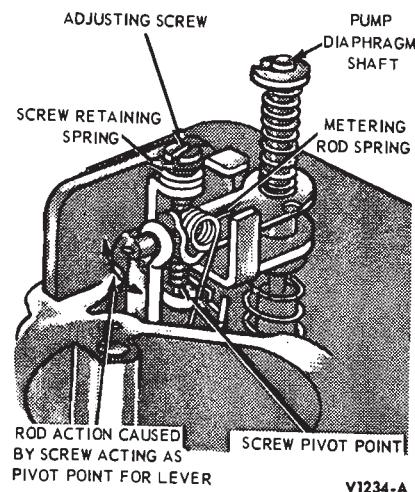


FIG. 5—Metering Rod Adjustment

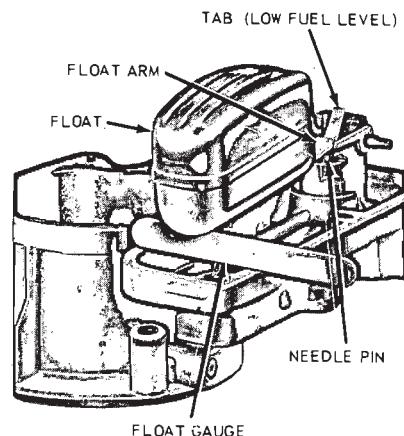


FIG. 6—Fuel Level Float Adjustment

Refer to Carburetor Air Horn to Main Body Gasket Replacement for the proper procedure.

AIR HORN TO MAIN BODY GASKET REPLACEMENT

REMOVAL

1. Remove the air cleaner.
2. Disconnect the choke heat tube at the carburetor air horn. Disconnect the fuel inlet line at the carburetor.

3. Disengage the throttle connecting rod retainer from the choke connector rod, and pull the rod out of the fast idle link. Remove the air horn assembly attaching screws, dashpot and bracket assembly or solenoid throttle positioner and air horn gasket. Discard the gasket.

INSTALLATION

1. Install a new air horn to main body gasket. Make sure all holes in the new gasket have been properly punched and that no foreign material has adhered to the gasket. Install the air horn assembly, dashpot and bracket assembly or solenoid throttle positioner and air horn attaching screws. Insert the end of the choke connector rod in the fast idle link, and secure it with the throttle connector rod retainer.

2. Connect the fuel inlet line and choke heat tube to the carburetor air horn.

3. Install the air cleaner. Start the engine and run it until normal operating temperature is reached. Adjust the idle fuel mixture and idle speed.

FLOAT OR NEEDLE VALVE REPLACEMENT

1. Remove the carburetor air horn and gasket, by following instructions under Air Horn to Main Body Gasket Replacement.

2. Hold the air horn assembly bottom side up, and remove the float pin and float and lever assembly. Turn the air horn assembly over and allow the needle pin, spring, needle, and seat to fall into the hand.

3. Remove the needle seat and gasket.

4. Replace the float if the needle pin contact surface is grooved. If the float is serviceable, polish the needle pin contact surface with crocus cloth or steel wool. Replace the float pin if it is worn.

5. Install the needle seat and gasket in the air horn. With the air horn

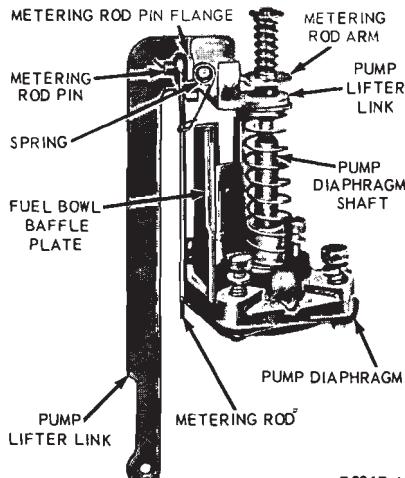


FIG. 7—Accelerating Pump and Lifter Link Assembly

inverted, install the needle, pin spring, needle pin, float and lever assembly, and float pin.

6. Adjust the float level to specifications.

7. Install the carburetor air horn and gasket.

MAIN METERING JET, LOW-SPEED JET, METERING ROD AND ACCELERATING PUMP

REMOVAL

1. Remove the carburetor from the engine as described in Part 23-01.

2. Remove the carburetor air horn and gasket by following the instructions under Air Horn to Main Body Gasket Replacement.

3. Turn the main body casting upside down and catch the accelerating pump check needle in your hand.

4. Loosen the throttle shaft arm screw, and remove the arm and the pump connector link.

5. Remove the accelerating pump diaphragm housing screws. Lift out the pump diaphragm assembly, the pump lifter link, the metering rod and the fuel bowl baffle plate as a unit (Fig. 7).

6. Disengage the metering rod arm spring from the metering rod, and remove the metering rod from the metering rod arm assembly. Compress the upper pump spring, and remove the spring retainer. Remove the upper spring, the metering rod arm assembly, and the pump lifter link from the

pump diaphragm shaft. Compress the pump diaphragm spring, and remove the pump diaphragm spring retainer, spring, and pump diaphragm assembly from the pump diaphragm housing assembly.

7. With the proper size jet tool or screwdriver remove the low speed jet and the metering rod jet (Fig. 8).

INSTALLATION

1. With the proper size jet tool (or screwdriver) install the low speed jet and the metering rod jet (Fig. 8).

2. Install the pump diaphragm in the pump diaphragm housing. Position the pump diaphragm spring on the diaphragm shaft and housing assembly. Install the spring retainer. Install the pump lifter link, metering rod arm and spring assembly, the upper pump spring on the diaphragm shaft. Depress the spring and install the upper pump spring retainer.

3. Install the metering rod on the metering rod arm and place the looped end of the metering rod arm spring on the metering rod as shown in Fig. 7. Align the pump diaphragm with the diaphragm housing; make sure holes are aligned. Install the housing attaching screws to keep the diaphragm and housing aligned.

4. Install the carburetor air horn and gasket as described under Air Horn to Main Body Gasket Replacement.

5. Install the carburetor on the engine as described in Part 23-01.

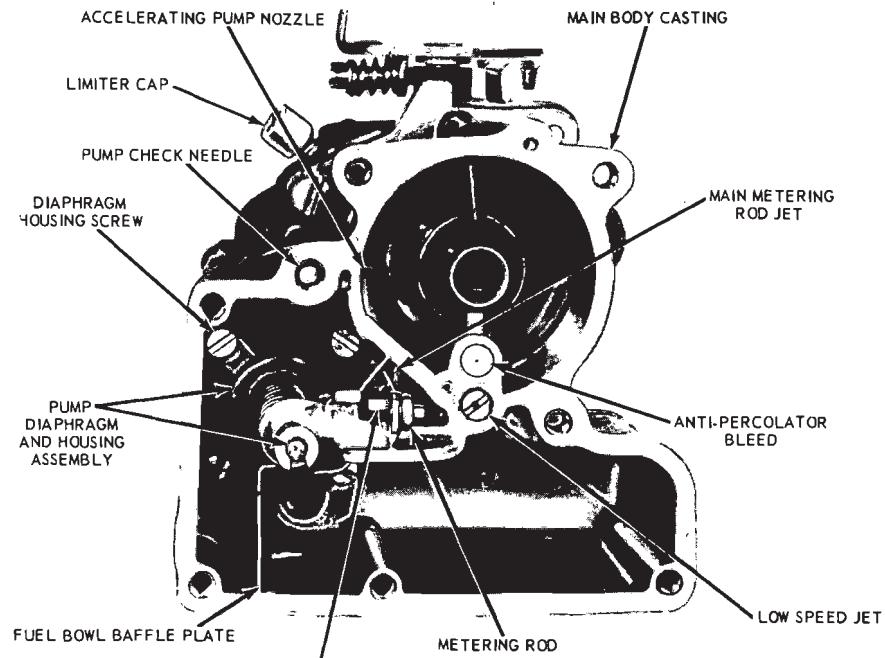


FIG. 8—Pump Diaphragm and Housing Installation

2 MAJOR REPAIR OPERATIONS

Refer to Part 23-01, Section 4 for cleaning and inspection procedures.

DISASSEMBLY

Use a separate container for the component parts of the various assemblies to facilitate cleaning, inspection and assembly.

The following is a step-by-step sequence of operations for completely overhauling the carburetor; however, certain components of the carburetor may be serviced without a complete disassembly of the entire unit.

1. Disengage the throttle connector rod retainer (Fig. 10) from the choke connector rod, and pull the rod out of the fast idle link.

2. Remove the attaching screws and retainers, the thermostatic spring housing assembly, spring housing gasket, spring housing baffle plate, choke trip lever and pin assembly, and fast idle link.

3. Remove the air horn assembly attaching screws, dashpot and bracket assembly, air horn assembly, and air horn gasket.

4. Hold the air horn assembly bottom side up, and remove the float pin and float and lever assembly. Turn the air horn assembly over and allow the needle pin, spring, needle, and seat to fall into the hand.

5. Remove the needle seat and gasket.

6. Remove the air cleaner bracket. Remove the choke plate attaching screws. File the staked ends, if necessary, and use new screws upon reassembly. Remove the choke plate from the air horn assembly. Disengage the fast idle cam spring from the cam spring lever on the choke piston lever and shaft assembly. Rotate the choke shaft and piston assembly counter-clockwise until the choke piston is out of the choke piston cylinder (Fig. 9). Remove the assembly from the air horn. Remove the piston pin, piston, fast idle cam, and fast idle cam spring from the choke piston lever and shaft assembly.

7. Turn the main body casting upside down and catch the accelerating pump check needle.

8. Disconnect the throttle shaft arm spring. Loosen the throttle shaft arm screw, and remove the arm and pump connector link.

9. Remove the accelerating pump diaphragm housing screws. Lift out

the pump diaphragm assembly, the pump lifter link, the metering rod and the fuel bowl baffle plate as a unit (Fig. 7).

10. Disengage the metering rod arm spring from the metering rod, and remove the metering rod from the metering rod arm assembly. Compress the upper pump spring, and remove the spring retainer. Remove the upper spring, the metering rod arm assembly and the pump lifter link from the pump diaphragm shaft. Compress the pump diaphragm spring, and remove the pump diaphragm spring retainer, spring, and pump diaphragm assembly from the pump diaphragm housing assembly.

11. With the proper size jet tool or screwdriver remove the low speed jet (Fig. 8).

12. Remove the retaining screws and separate the throttle body flange assembly from the main body casting. Remove the body flange gasket.

13. Remove the throttle plate retaining screws. File the staked ends, if necessary, and use new screws upon reassembly. Slide the throttle shaft and lever assembly out of the throttle body flange assembly.

Do not remove the idle mixture limiter caps or the mixture screws from the throttle body.

ASSEMBLY

1. Install the throttle shaft and lever assembly (Fig. 10) in the throttle body flange. Position the throttle plate on the throttle shaft with the notch in the plate aligned with the slotted idle port (Figs. 11 and 12) in the throttle body flange. Install the throttle plate attaching screws snug, but not tight. Move the shaft back and forth and rotate it to be sure the throttle plate does not bind in the flange bore. Reposition the plate if necessary. Tighten the screws and stake (or peen) the screws in place.

2. Place a new body flange gasket and the main body casting on the throttle body flange. Install the attaching screws and tighten them evenly.

3. With the proper size jet tool (or screwdriver) install the low speed jet and the metering rod jet (Fig. 8).

4. Install the pump diaphragm in the pump diaphragm housing (Fig. 8). Position the pump diaphragm spring on the diaphragm shaft and housing

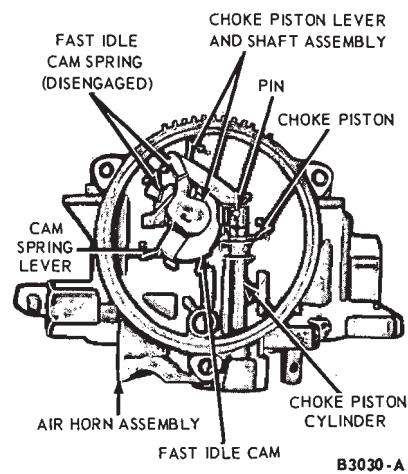


FIG. 9.—Automatic Choke Piston Removal or Installation

assembly. Install the spring retainer. Install the pump lifter link, metering rod arm and spring assembly, and upper pump spring on the diaphragm shaft. Depress the spring and install the upper pump spring retainer.

5. Install the metering rod on the metering rod arm and place the looped end of the metering rod arm spring on the metering rod as shown in Fig. 7. Align the pump diaphragm with the diaphragm housing; make sure the holes are aligned. Install the housing attaching screws to keep the diaphragm and housing aligned.

6. Position the fuel bowl baffle plate on the pump assembly as shown in Figs. 7 and 8. Align the pump housing, pump lifter link, metering rod and baffle plate with the main body casting. Be sure the vacuum passage in the diaphragm housing is aligned with the vacuum passage in the main body. Install the assembly in the main body casting, being careful to engage the pump lifter link with the main body, the baffle plate with the grooves in the main body, and to insert the metering rod in the metering rod jet. Install the pump housing attaching screws snug, but not tight. Push down on the diaphragm shaft to compress the diaphragm, and tighten the attaching screws. Adjust the metering rod, following the procedure under Metering Rod Adjustment.

7. Install the throttle shaft arm and pump connector link on the throttle shaft and pump lifter link (Fig. 13).

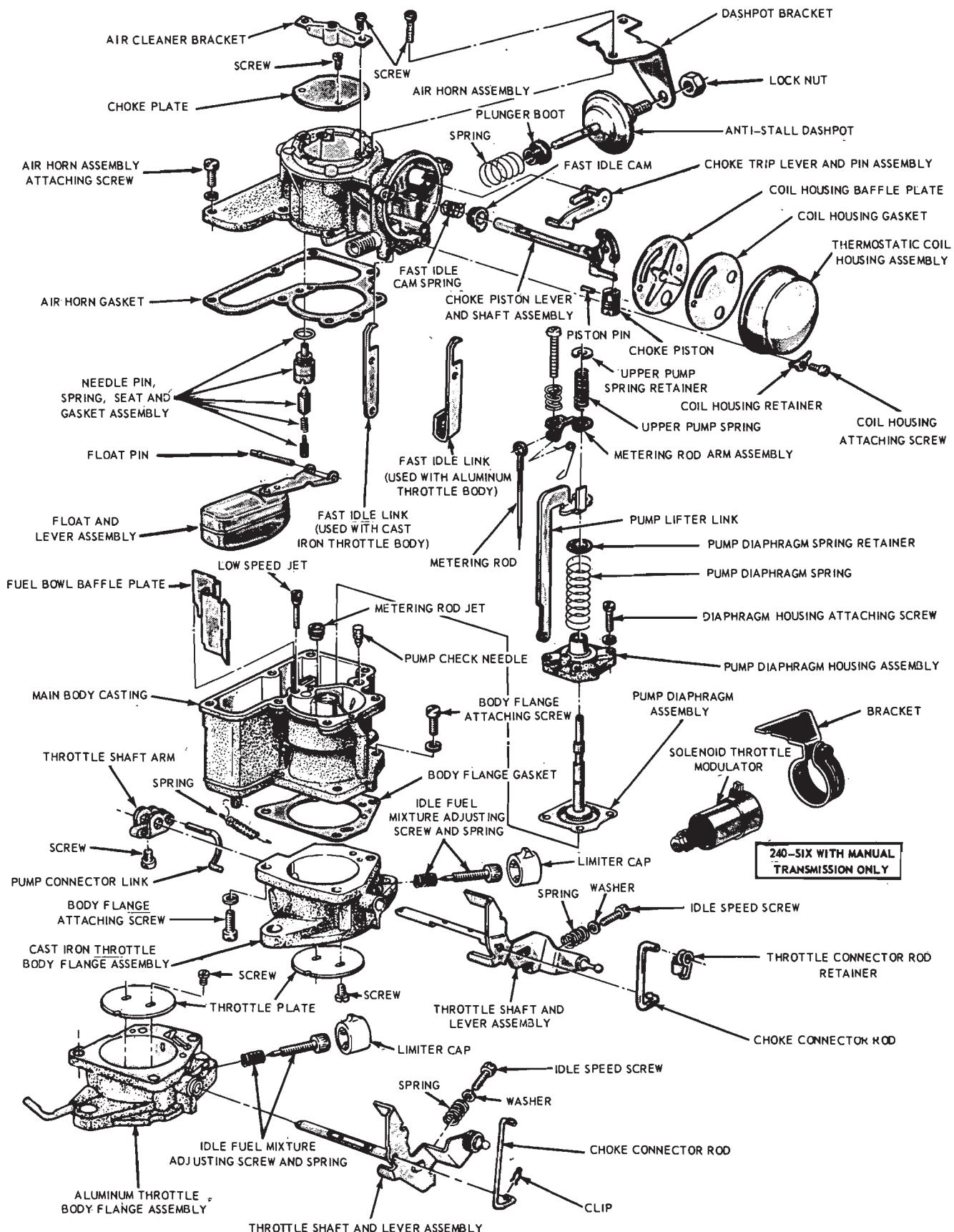


FIG. 10—Carter Model YF 1-V Carburetor Assembly

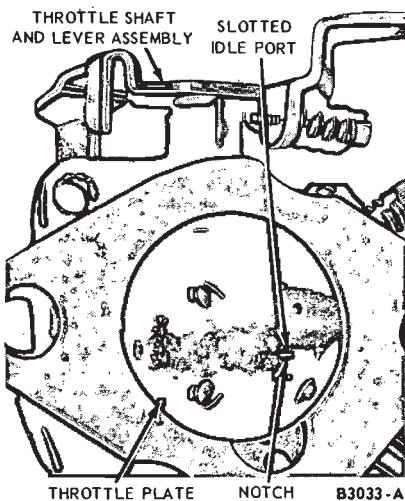


FIG. 11—Throttle Plate Installation in Cast Iron Throttle Body

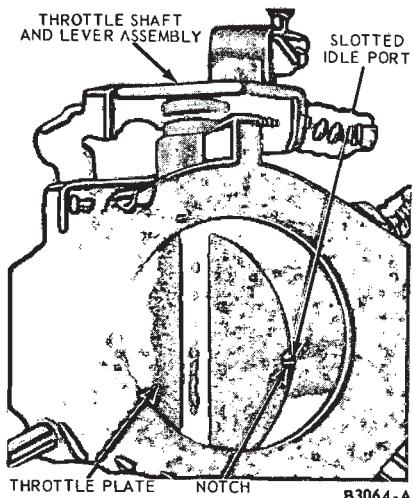


FIG. 12—Throttle Plate Installation in Aluminum Throttle Body

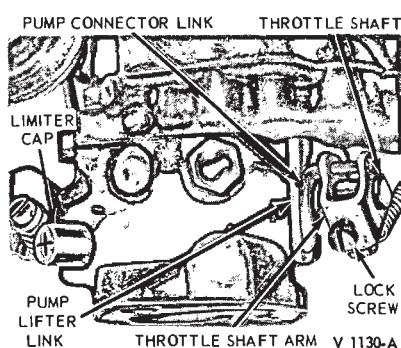


FIG. 13—Throttle Shaft Arm Installation

Tighten the lock screw. Connect the throttle shaft arm return spring.

8. Install the fast idle cam and spring on the choke piston lever and shaft assembly. Assemble the choke piston and pin to the choke piston lever and shaft assembly. Disengage the cam spring from the cam spring lever on the choke lever and shaft assembly. Install the choke shaft assembly in the air horn and position the piston as shown in Fig. 9.

9. Align the piston with the cylinder and rotate the shaft assembly clockwise until the piston pin is inside the piston cylinder. Position the cam spring on the cam spring lever of the choke lever assembly. When the spring is properly positioned, the tangs on the cam and the choke lever will be aligned one in front of the other.

10. Position the choke plate on the

choke shaft and install the screws snug. Check the choke plate movement to be sure it isn't binding. Tighten the screws and peen or stake them to prevent loosening.

11. Install the needle seat and gasket in the air horn. With the air horn inverted, install the needle, pin spring, needle pin, float and lever assembly, and float pin. Adjust the float level to specifications.

12. Place the pump check needle in the main body casting (Fig. 8). Position a new air horn gasket, the air horn assembly, and the anti-stall dashpot and bracket on the main body. Install and tighten the attaching screws.

13. Install the choke trip lever and fast idle link in the choke housing of the air horn. Be sure they are properly engaged with each other and with the choke piston lever and shaft assembly. Install the thermostatic coil housing, gasket and baffle plate, identification mark facing outward, with the gasket between the baffle and coil housing. Be sure the thermostatic spring engages the choke lever tang. Install the retainers and housing screws. Set the coil housing index to specifications and tighten the screws.

14. Install the air cleaner bracket. Install the throttle connector rod retainer on the fast idle link. Install the choke connector rod on the throttle lever and fast idle link. Engage the connector rod retainer with the choke connector rod when attaching air horn to main body.

3 SPECIFICATIONS

CARTER MODEL YF 1-V CARBURETOR

Vehicle	Engine CID	Transmission	With A/C	Without A/C	Air-Fuel Ratio
Maverick	170	Manual	DODF-U	DODF-R	14.45
Maverick	170	Auto.	DODF-S	DODF-N	14.45
Maverick, Mustang, Falcon	200	Manual	DODF-T	DODF-M	14.45
Maverick, Mustang, Falcon	200	Auto.	DODF-V	DODF-L	14.20
Ford, Meteor, Police, Taxi	240	Manual	DOAF-A	DOAF-A	14.45
Ford, Meteor, Police, Taxi	240	Auto.	DOAF-B	DOAF-B	14.70
<hr/>					
Carburetor No. (9510)	DODF-R DODF-U ①	DODF-N DODF-S ②	DODF-M DODF-T ③	DODF-L DODF-V ④	DOAF-A ⑤ DOAF-B
CARBURETOR SIZE					
Throttle Bore Diam.	1.44		1.68		1.687
Venturi Diam.	1.187		1.312		1.31
Air Flow CFM	150			187	
FUEL SUPPLY SYSTEM					
Float Setting	7/32			3/8	
IDLE SYSTEM					
Idle Tube Diam.	0.035		0.033		0.033
Idle By-Pass		0.052		0.049	
Idle Bleed		0.0465		0.052	
Economizer		0.063		0.086	
Curb Idle Orifice		0.030 x 0.200		0.040 x 0.210	
Idle Transfer Slot					
MAIN SYSTEM					
Main Jet	0.092	0.104	0.101	0.104	0.101
Metering Rod No.	75-1839	75-1821	75-1840	75-1841	
Metering Rod Size	.0645-.050-.040 .0645-.050-.040	.079-.067-.0495	.0775-.061-.045	.079-.067-.053	.079-.060-.047
Anti-Percolator Diam.	0.028				
Angle Bleed	0.035			0.028	
Spark Port	0.073			0.040	
PUMP SYSTEM					
Pump Jet	0.028	0.025	0.028		0.031
Pump Bleed			0.018		
CHOKE SYSTEM					
Choke Cap Indent.	AS	U	AZ	U	AJ
Choke Cap Setting	I-Rich		Index		I-Lean
Choke Plate Hole Diam.	0.250				
Pulldown ④	0.225	0.265		0.225	
Choke Restrictor	0.098	0.076		0.106	
Dechoke (Minimum)	0.280		0.250		
DASHPOT					
Adjustment (If Equipped) ± 1/64		7/64		Solenoid Equipped	7/64
IDLE SPEED					
Idle rpm ⑤	⑥ 0.036	⑦ 0.035	⑧ 0.031	⑨ 0.036	800 / 500 ⑩ 0.029
Fast Idle Throttle Plate Clearance					500 0.035

① Equipped with Throttle Solenoid

② With 0.026-inch Gauge

③ Higher idle speed with throttle solenoid energized - lower idle speed with throttle solenoid de-energized.

④ Headlamps on Hi Beam—Air Conditioning OFF (if equipped)

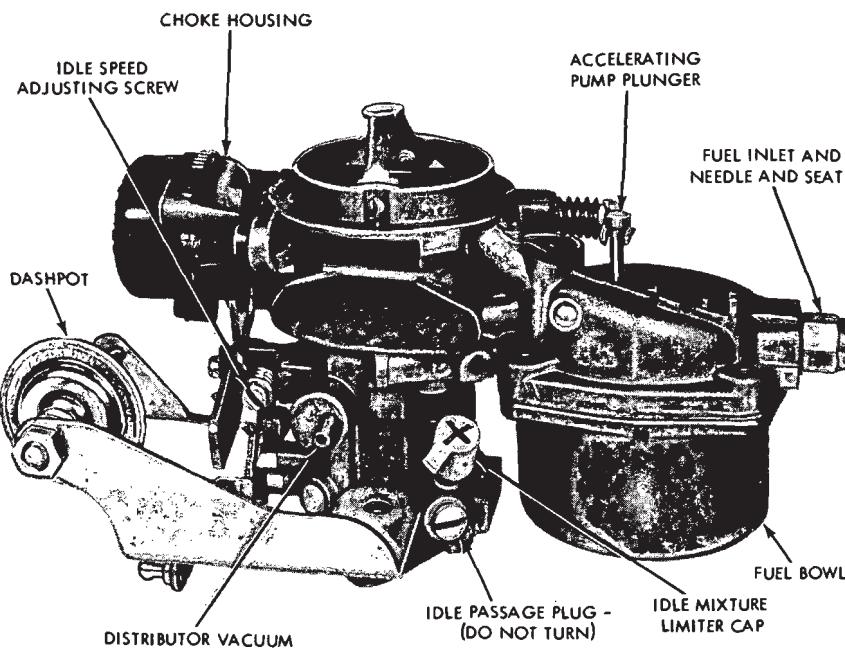
⑤ 750 for non air-conditioned vehicles - 800 for air-conditioned vehicles

⑥ 550 for non air-conditioned vehicles - 600 for air-conditioned vehicles

PART 23-03 Carter Model RBS 1-V Carburetor

The Carter Model RBS 1-V carburetor is used exclusively on the 250 CID six engine.

COMPONENT INDEX	Page	COMPONENT INDEX	Page
ACCELERATING PUMP STROKE ADJUSTMENT	03-02	CHOKE PLATE PULLDOWN ADJUSTMENT	03-02
CARBURETOR Assembly	03-04	DECHOKE CLEARANCE ADJUSTMENT ...	03-03
Description	03-01	FLOAT LEVEL ADJUSTMENT	03-03
Disassembly	03-03	PERFORMANCE ADJUSTMENTS	03-02
		SPECIFICATIONS	03-07



DESCRIPTION

The Carter Model RBS carburetor is of single-venturi design (Figs. 1 and 2) which incorporates a single lightweight aluminum casting with a pressed steel fuel bowl. All calibration points are located in the single casting, and two internal vapor vents allow rapid fuel vapor dissipation to help provide smooth idle conditions and to minimize hard starting when the engine is hot.

A diaphragm-controlled step-up type metering rod controls the fuel supply and the accelerating pump is spring-actuated. The carburetor is equipped with a vacuum piston automatic choke. A pneumatic dashpot is used to control the rate of throttle return to idle; and in some installations a solenoid throttle positioner is used.

FIG. 1—Carter Model RBS 1-V Carburetor Equipped with a Pneumatic Dashpot

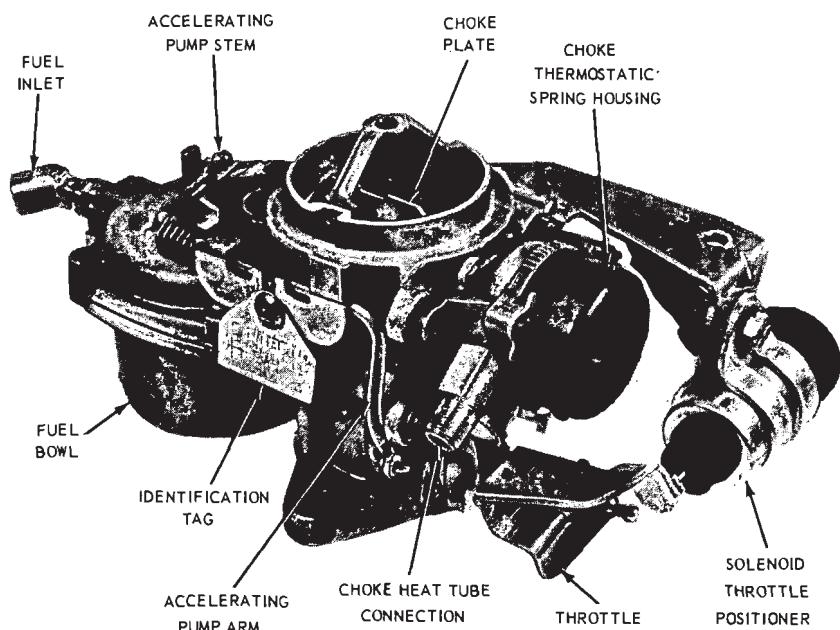


FIG. 2—Carter Model RBS 1-V Carburetor Equipped with a Solenoid Throttle Positioner

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1 IN-VEHICLE ADJUSTMENTS AND REPAIRS

PERFORMANCE ADJUSTMENTS

The following carburetor adjustments are described and illustrated in Part 23-01 of this Group:

Idle Speed and Fuel Mixture

Fast Idle Speed

Anti-Stall Dashpot

Automatic Choke

To enable the vehicle to operate within the range of Government regulations to control engine emissions, the specifications for the adjustments were determined to help provide the most desirable engine performance characteristics. These specifications are contained in Part 23-01 of this

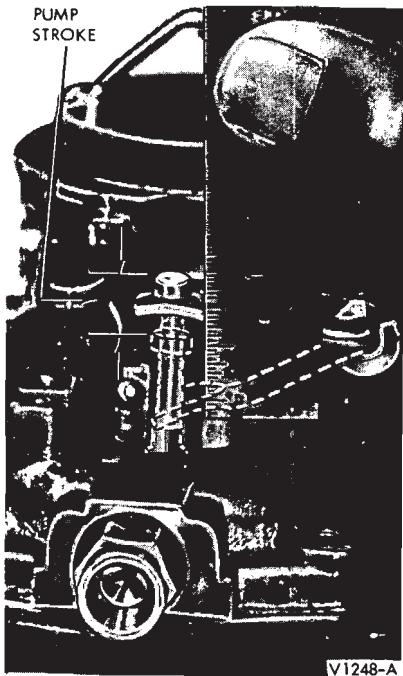


FIG. 3—Accelerating Pump Stroke

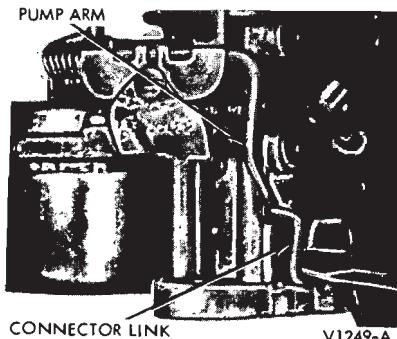


FIG. 4—Adjusting Accelerating Pump Stroke

Group, and are arranged in chart form for ready reference.

The adjustment and repair procedures described in this part are performed less frequently, and are unique to the Carter Model RBS 1-V carburetor. The specifications for these adjustments and other technical data are listed at the end of this Part.

ACCELERATING PUMP STROKE ADJUSTMENT

1. Back off the idle speed adjustment screw and open the choke plate to allow the throttle plate to seat in the bore.

2. Measure the height from the flat surface of the main body casting to

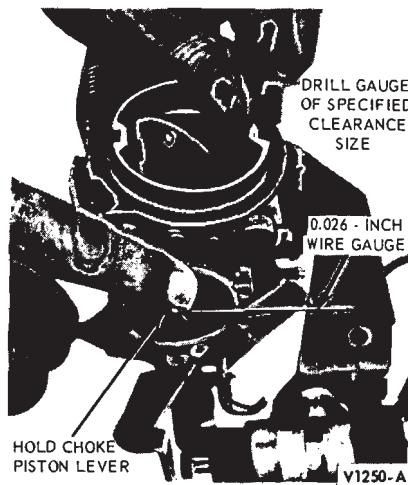


FIG. 5—Adjusting Choke Plate Pulldown

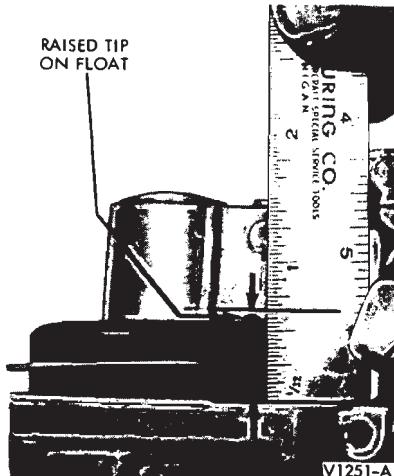


FIG. 6—Measuring Fuel Float Level

the top surface of the pump stem. Note the measurement (Fig. 3).

3. Open the throttle wide, then measure the height again. The pump stroke is the difference between the two measurements.

4. To adjust the stroke to specifications, open or close the pump connector link at the offset portion (Fig. 4).

CHOKE PLATE PULLDOWN ADJUSTMENT

1. Remove the choke thermostatic spring housing and gasket.

2. Bend a 0.026-inch diameter wire gauge at a 90 degree angle approximately 1/8-inch from one end. Insert the bent end of the gauge between the choke piston slot and the right hand slot in the choke housing. Rotate the choke piston lever counterclockwise until the gauge is snug in the piston slot.

3. Exert a light pressure on the choke piston lever to hold the gauge in place, then use a drill with a diameter equal to the specified clearance between the lower edge of the choke plate and the carburetor bore to check the clearance (Fig. 5).

4. To adjust the choke plate pulldown clearance, bend the choke piston lever as required to obtain the



FIG. 7—Adjusting Fuel Float Level

specified setting. Remove the choke piston lever for bending to prevent distorting the piston link, causing erratic choke operation.

5. Install the choke thermostatic spring housing and gasket. Set the housing to specifications.

DECHOKE CLEARANCE ADJUSTMENT

1. Hold the throttle lever at the wide open throttle position, then check for the specified clearance bet-

ween the upper edge of the choke plate and the inner wall of the main body.

2. Adjust the clearance to specifications by bending the tang on the throttle lever.

FLOAT LEVEL ADJUSTMENT

1. Remove the fuel bowl and gasket.

2. With the main body inverted, and only the weight of the float assembly pressing against the inlet

needle and seat, measure the vertical distance from the main body casting to the raised tips formed in the outer ends of the float (Fig. 6).

3. Measure for the specified setting at both ends of the float. Equalize the measurement, if necessary, by holding the float lever securely at the narrow portion with needle-nose pliers and twisting the float as required. While holding the tab, adjust the float to the specified setting (Fig. 7). Hold the tab of the float lever away from the inlet needle while adjusting.

2 MAJOR REPAIR OPERATIONS

DISASSEMBLY

1. Remove the anti-stall dashpot or solenoid throttle positioner and bracket.

2. Remove the thermostatic choke housing retainer screws, retainers, housing and gasket.

Remove the choke piston lever screw and choke piston lever, piston and wire link (Fig. 8).

3. Remove the air cleaner anchor screw bracket. Remove the fork lever from the choke plate shaft, then remove the choke plate screws and plate. Slide the shaft out of the main body.

4. Remove the fast idle cam retainer (Fig. 9) and the plastic collar, then remove the cam and disengage the fast idle connector rod from the cam and fork lever on the choke plate shaft.

5. Remove the accelerating pump arm connector link clip; free the accelerating pump arm retaining spring from the accelerating pump arm at the pump plunger end.

6. Remove the accelerating pump arm retainer screw and retainer, then remove the pump arm, spring and plastic sleeve (Fig. 10).

7. Remove the fuel bowl attaching screws, bowl and gasket.

8. Remove the float pin attaching screws, float, pin and fuel inlet needle valve and seat assembly from the body casting (Fig. 11).

9. Remove the accelerating pump assembly. Use a light hammer and tap on the upper end of the pump plunger shaft. The accelerating pump cover, plunger and spring will drop from the lower end of the casting (Fig. 12).

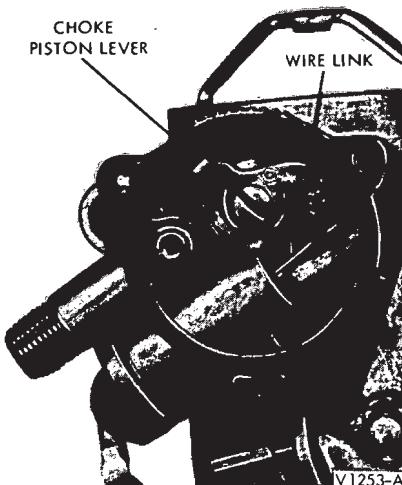


FIG. 8—Thermostatic Choke Removal

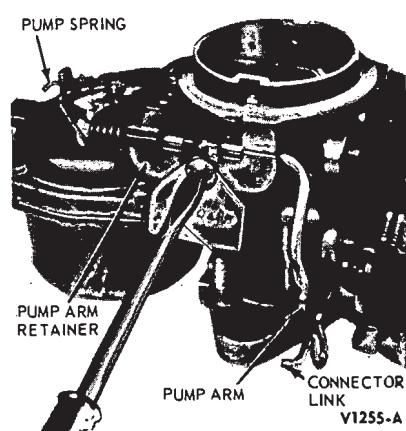


FIG. 10—Accelerating Pump Arm Removal

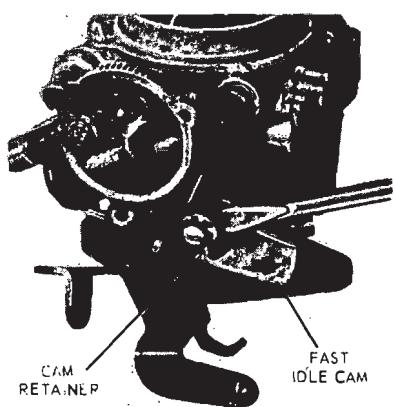


FIG. 9—Fast Idle Cam Retainer Removal

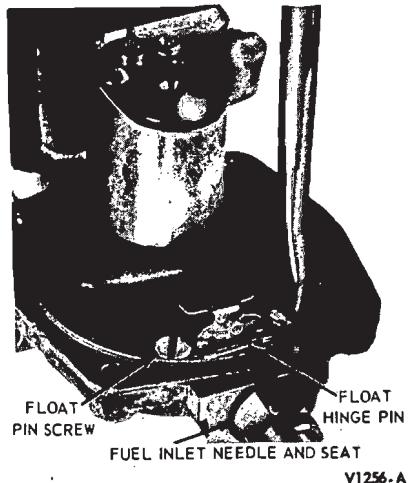


FIG. 11—Fuel Bowl Float Removal

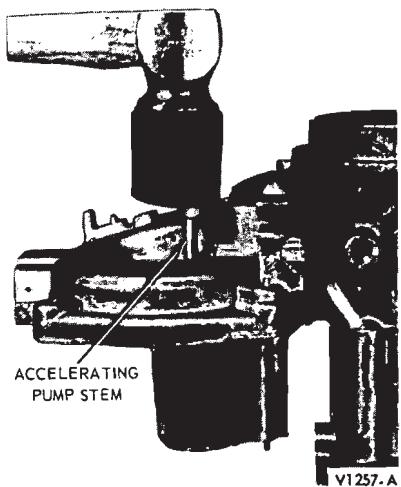


FIG. 12—Accelerating Pump Removal

10. Remove the step-up metering rod and diaphragm assembly by prying the conical washer out of the diaphragm cover with a screwdriver. Pierce the cover with a sharp pointed tool and pry the cover from the casting.

11. Remove the diaphragm retainer, spring and diaphragm and step-up metering rod assembly.

12. If it is necessary to remove the throttle plate or shaft and lever assembly, lightly scribe the throttle plate and the bottom of the mounting flange to facilitate installation (Fig. 13). Remove the throttle plate screws. If the tips of the screws are flared excessively, file the flared portion to avoid damage to the threads in the throttle shaft. Avoid damage to the throttle shaft or bore while filing the screws.

Remove the throttle plate, then slide the throttle shaft and lever assembly out of the main body.

13. Remove the idle mixture limiter cap, idle mixture screw and spring and the idle speed adjusting screw and spring. Do not attempt to remove the slotted idle passage plug located below the idle limiter. It is pressed-in at assembly, and any position change will affect the idle quality.

CLEANING AND INSPECTION

Refer to Part 23-01 for the Cleaning and Inspection procedures.

ASSEMBLY

The Carter Model RBS 1-V carburetor assembly is shown in Fig. 15.

- Invert the main body casting,

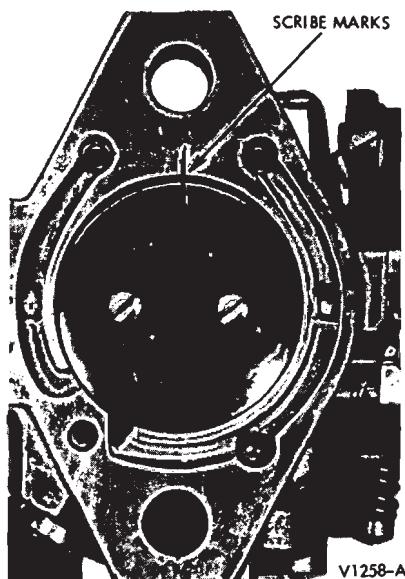


FIG. 13—Throttle Plate Scribe Marks

then place the accelerating pump plunger with the spring, spring seat and shims in the pump housing (Fig. 15). Press the pump cover assembly into the end of the housing. A new cover assembly should be used to provide a good seal. Use a 5/8-inch socket to press on the outer edge of the cover and, using a light hammer, tap the cover until it seats on the main body casting. Do not exert force on the center portion of the pump cover.

2. Install the idle jet in the main body.

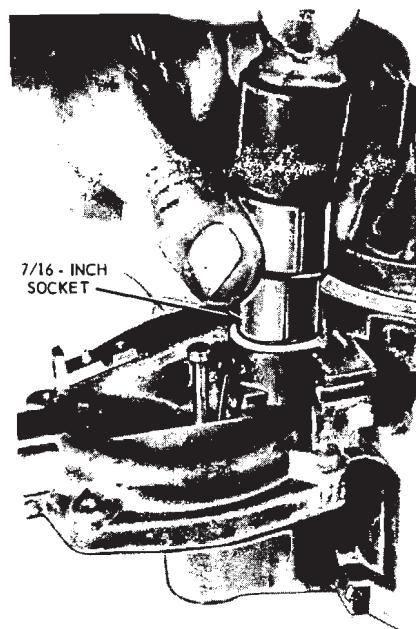
3. With the main body upright, insert the step-up metering rod halfway into the sleeve in the casting, then drop in place in the main body. Position the diaphragm spring and retainer over the diaphragm. Install a new diaphragm cover; using a 1/2-inch socket, tap with a light hammer until the diaphragm cover seats in the main body.

4. Install a new conical washer over the diaphragm cover and, using a 7/16-inch socket (Fig. 14) tap with a light hammer until the washer is flat in the main body.

5. Slide the throttle shaft and lever assembly into the main body.

6. Refer to the scribe marks on the throttle plate and main body and install the plate on the shaft with the screws snug, but not tight.

7. Close the throttle plate. Invert the main body, and hold it up to the light. Little or no light should show between the throttle plate and the throttle bore. Tap the plate lightly to



V1260-A

FIG. 14—Metering Rod Diaphragm Conical Washer Installation

seat. Hold the plate closed and tighten and stake the attaching screws. When staking the screws, support the shaft and plate with a block of wood or metal bar to prevent bending the shaft.

8. Install the accelerating pump connector link in the throttle lever and secure with the retainer clip.

9. Connect the accelerating pump arm with the arm connector link and secure with the retainer clip.

10. Engage the accelerating pump arm with the accelerating pump plunger. Position the pump arm return spring over the plastic sleeve, place the spring lower tang in the groove in the main body. Install the pump arm retainer and carburetor identification tag, then hook the spring upper end under the arm near the plunger.

11. Slide the choke shaft into the main body, install the choke plate with the hole in the plate on the lower edge. The choke plate screws should be snug, but not tight. Center the plate in the venturi by tapping lightly, then tighten the screws.

12. Attach the fast idle connector rod to the fork lever, then crimp the forked ends of the lever to lock it on the choke shaft.

13. Attach the lower end of the fast idle connector rod to the slot in the fast idle cam, then install the fast idle cam, plastic collar and retainer.

14. Assemble the choke piston link (wire) to the choke piston lever, slide the piston into the vacuum cylinder in the choke housing and attach the choke link to the choke lever. Position the lever on end of choke shaft and secure with the attaching screw. Be sure the choke linkage moves freely and does not bind in any position.

15. Install the choke thermostatic housing gasket, housing and housing retainers and screws.

16. Install the idle speed adjusting screw and spring and the idle fuel mixture adjusting screw and spring. **Install the idle limiter only after the air-fuel ratio has been adjusted with the carburetor on the vehicle.**

17. Invert the main body, install the fuel inlet needle and seat assembly. Insert the float hinge pin in float lever and install in the main body with the attaching screws. Adjust the fuel bowl float level.

18. Install a new fuel bowl gasket and the fuel bowl with the attaching screws.

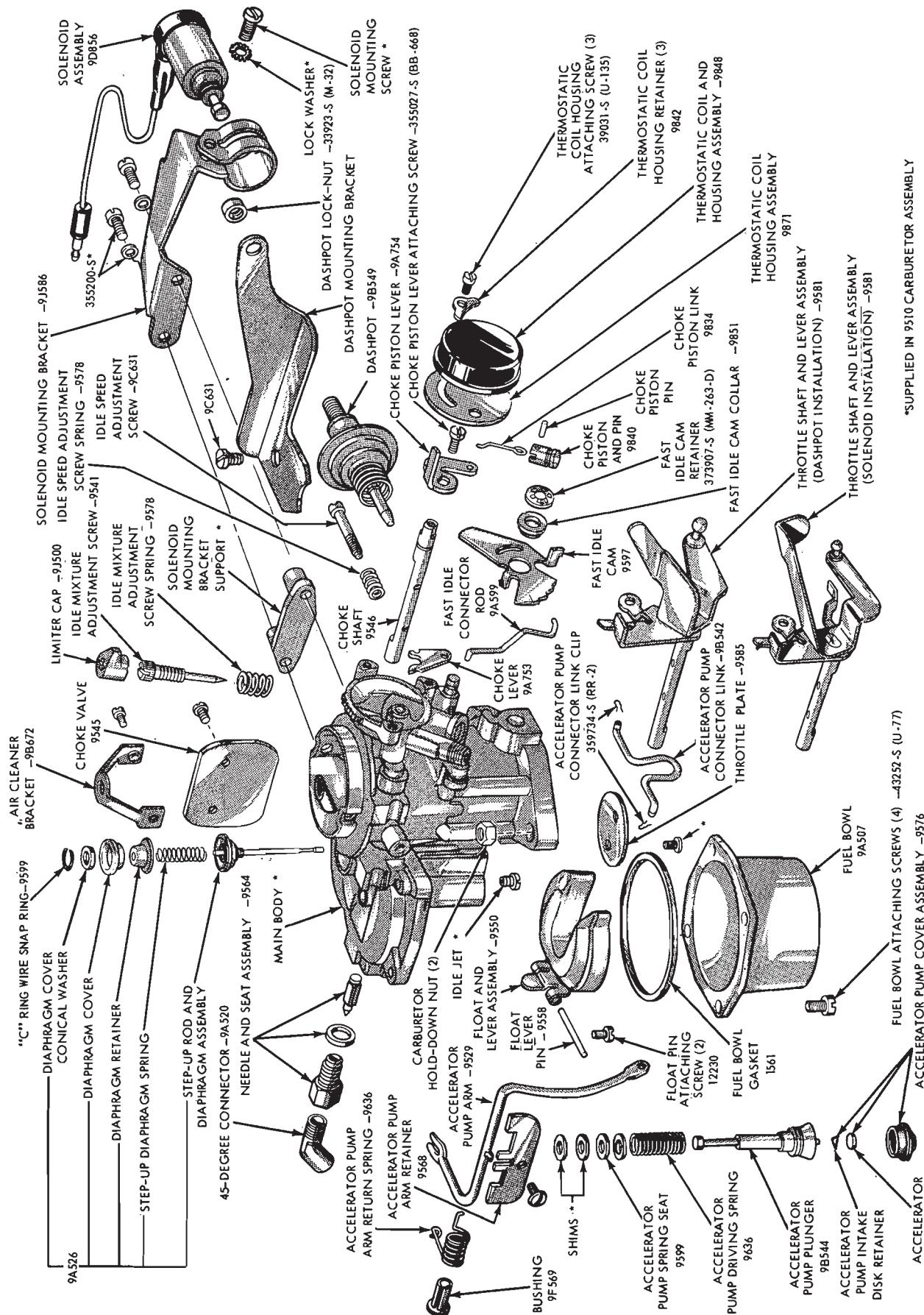


FIG. 15—Carter Model RBS 1-V Carburetor Assembly

V129-B

3 SPECIFICATIONS

CARTER MODEL RBS 1-V CARBURETOR

Vehicle	Engine CID	Transmission	With A/C	Without A/C	Air-Fuel Ratio
Fairlane-Montero-Mustang	250	Manual	DOZF-C	DOZF-C	14.20
Fairlane-Montero-Mustang	250	Auto.	DOZF-D	DOZF-F	14.20
Carburetor No. (9510)		DOZF-C		DOZF-D	DOZF-F
CARBURETOR SIZE					
Throttle Bore Diameter		1.562			
Venturi Diameter		1.437			
Air Flow (cfm)		215			
FUEL SUPPLY SYSTEM					
Float Setting (inch)		9/16			
IDLE SYSTEM					
Idle Tube		0.033			
Vertical Constant Feed Jet		0.052			
Idle By-Pass		0.043			
Idle Bleed		0.076			
Economizer		0.0492			
Curb Idle Orifice		0.073			
Idle Transfer Slot		0.210 x 0.030			
MAIN SYSTEM					
Main Jet		0.080			
Metering Rod No.		16-638S		16-639S	
High Speed Bleed		0.0492			
Nozzle Strut Bleed		0.040			
Horizontal Constant Feed Jet		0.052			
Spark Port		0.040			
PUMP SYSTEM					
Pump Jet		0.026		0.028	
Pump Stroke - From Closed Throttle		0.400			
Pump Capacity		20-22			
CHOKE SYSTEM					
Choke Cap Identification		Index		FH	
Cap Setting				I-Rich	
Choke Plate Hole Diameter		0.187			
Pulldown ①		0.190			
Choke Restrictor		0.093			
Dechoke (Minimum)		0.250		0.252	
DASHPOT					
Adjustment (If Equipped) ± 1/64		Solenoid Equipped		7/32	
IDLE SPEED					
Idle rpm ②		750/500 ③		600/500 ③	
Fast Idle Throttle Plate Clearance		0.040		0.046	

① With 0.026-inch Gauge

② Higher idle speed with throttle solenoid energized—lower idle speed with throttle solenoid de-energized.

③ Headlamps on Hi Beam—Air Conditioning OFF (if equipped)

PART 23-04 Autolite Model 2100-D 2-V Carburetor

The Autolite Model 2100-D 2-V carburetor is used on all 2-venturi engine applications.

COMPONENT INDEX	Page	COMPONENT INDEX	Page
ACCELERATING PUMP		FUEL LEVEL FLOAT	
Diaphragm Removal and Installation	04-08	Adjustment—Dry	04-04
Stroke Adjustment	04-03	Adjustment—Wet	04-05
AIR HORN TO MAIN BODY GASKET		Installation	04-10
Installation	04-05	Removal	04-07
Removal	04-05	INLET SCREEN	
CARBURETOR		Installation	04-08
Assembly	04-08	Removal	04-07
Description	04-01	MAIN JETS	
Disassembly	04-07	Installation	04-08
CHOKE DIAPHRAGM		Removal	04-07
Installation	04-06	NEEDLE VALVE AND SEAT	
Removal	04-06	Installation	04-05
CHOKE PLATE PULLDOWN AND FAST IDLE CAM CLEARANCE		Removal	04-05
Choke Plate Clearance	04-03	PERFORMANCE ADJUSTMENTS	04-03
Fast Idle Cam Clearance	04-04	POWER VALVE TEST	04-06
ELASTOMER VALVE		SPECIFICATIONS	04-11
Installation	04-06		
Removal	04-06		

DESCRIPTION

The Autolite Model 2100-D 2-V carburetor (Figs. 1, 2 and 3) has two main assemblies, the air horn and the main body.

The air horn assembly, which serves as the main body cover, contains the choke plate, choke dia-

phragm assembly and the internal vents for the fuel bowl.

The throttle plate, the accelerating pump assembly, the power valve assembly, and the fuel bowl are in the main body. The automatic choke housing is attached to the main body.

Each bore contains a main and

booster venturi, main fuel discharge, accelerating pump discharge, idle fuel discharge and a throttle plate.

The Autolite Model 2100-D 2-V used on the 351-C engine has a unique two-piece fast idle lever and the crankcase emission hose connection is incorporated in the main body.

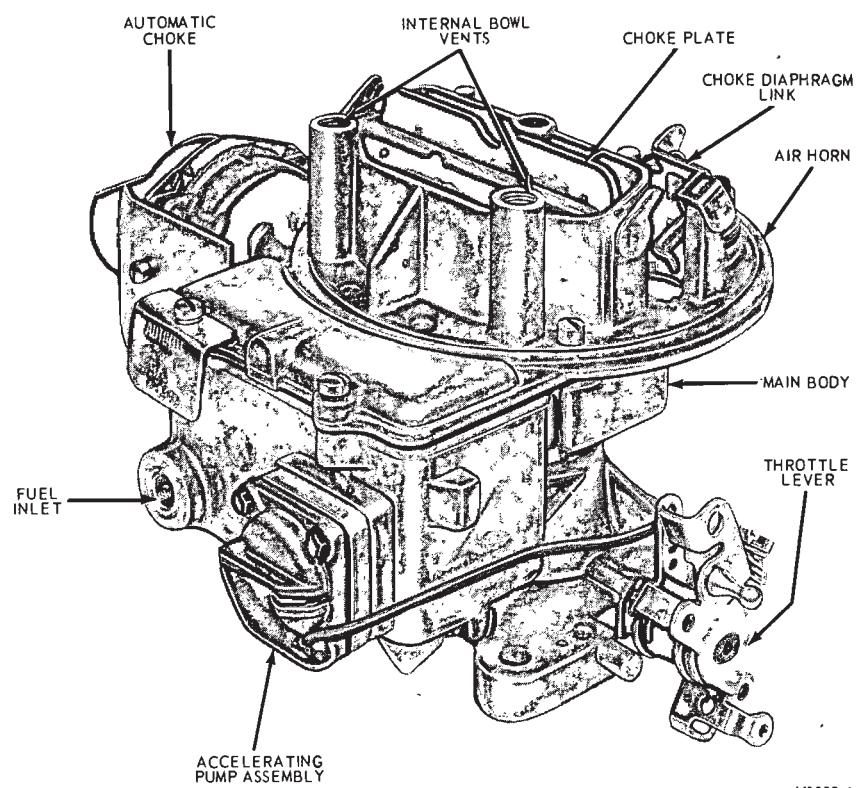


FIG. 1—Autolite Model 2100-D 2-V Carburetor—Left Front 3/4 View

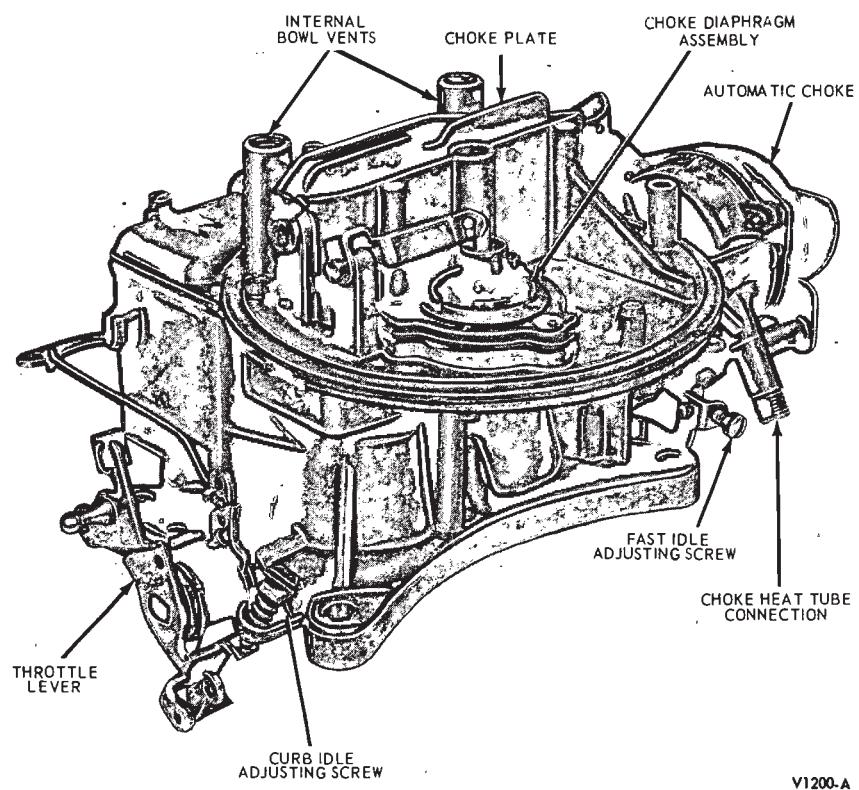
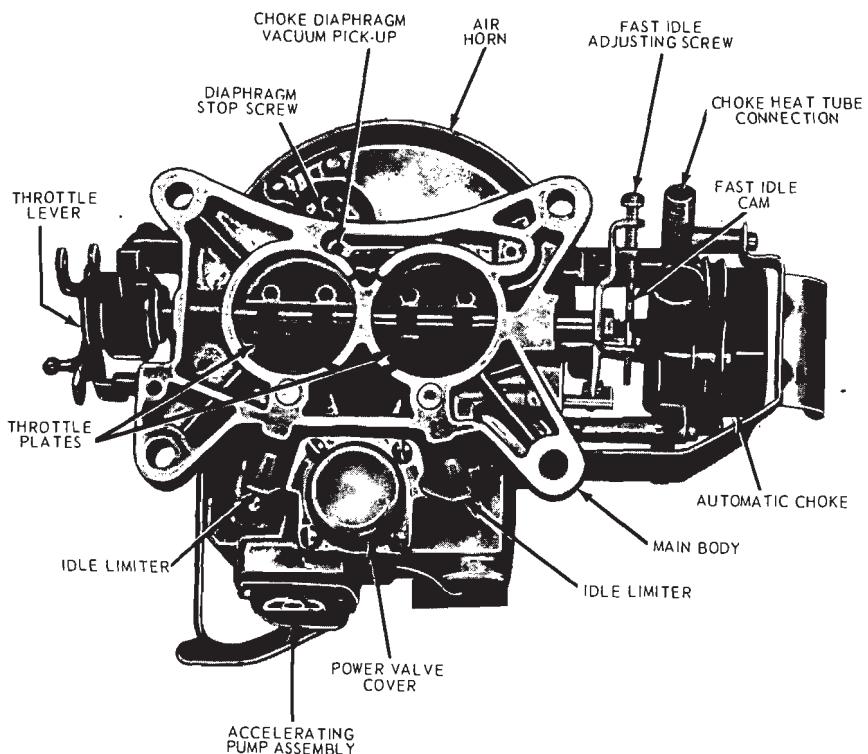


FIG. 2—Autolite Model 2100-D 2-V Carburetor—Left Rear 3/4 View



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FIG. 3—Autolite Model 2100-D 2-V—Bottom View

1 IN-VEHICLE ADJUSTMENTS AND REPAIRS

PERFORMANCE ADJUSTMENTS

The following carburetor adjustments are described and illustrated in Part 23-01 of this Group:

Idle Speed and Fuel Mixture

Fast Idle Speed

Anti-Stall Dashpot

Automatic Choke

To enable the vehicle to operate within the range of Government regulations to control engine emissions, the specifications for the adjustments were determined to help provide the most desirable engine performance characteristics. These specifications are contained in Part 23-01 of this Group, and are arranged in chart form for ready reference.

The adjustment and repair procedures described in this part are performed less frequently, and are unique to the Autolite Model 2100-D 2-V carburetor. The specifications for these adjustments and other technical

data are listed at the end of the Part.

ACCELERATING PUMP STROKE ADJUSTMENT

The accelerating pump stroke has been set to help keep the exhaust emission level of the engine within the specified limits. The additional holes provided for pump stroke adjustment are for adjusting the stroke for specific engine applications. The stroke should not be changed from the specified setting.

If the pump stroke has been changed from the specified setting refer to the following instructions to correct the stroke to specifications.

The primary throttle shaft lever (overtravel lever) has 4 holes and the accelerating pump link has 2 holes (Fig. 4) to control the accelerating pump stroke.

The accelerating pump operating rod should be in the specified hole in the overtravel lever and the inboard

hole (hole closest to the pump plunger) in the accelerating pump link (Fig. 4).

1. To release the rod from the retaining clip, press the tab end of the clip toward the rod; then, at the same time, press the rod away from the clip until it is disengaged.
2. Position the clip over the specified hole in the overtravel lever. Press the ends of the clip together and insert the operating rod through the clip and the overtravel lever. Release the clip to engage the rod.

CHOKE PLATE PULLDOWN AND FAST IDLE CAM CLEARANCE

Choke Plate Pulldown

1. Remove the air cleaner.
2. With the engine at normal operating temperature, loosen the choke thermostatic spring housing retainer screws and set the housing 90 degrees

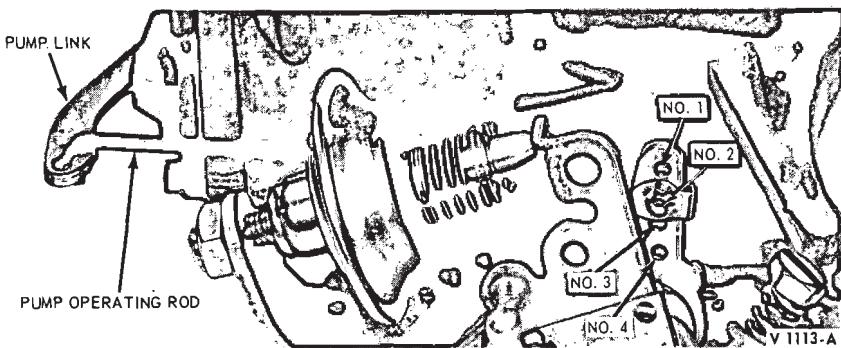


FIG. 4—Accelerating Pump Stroke Adjustment

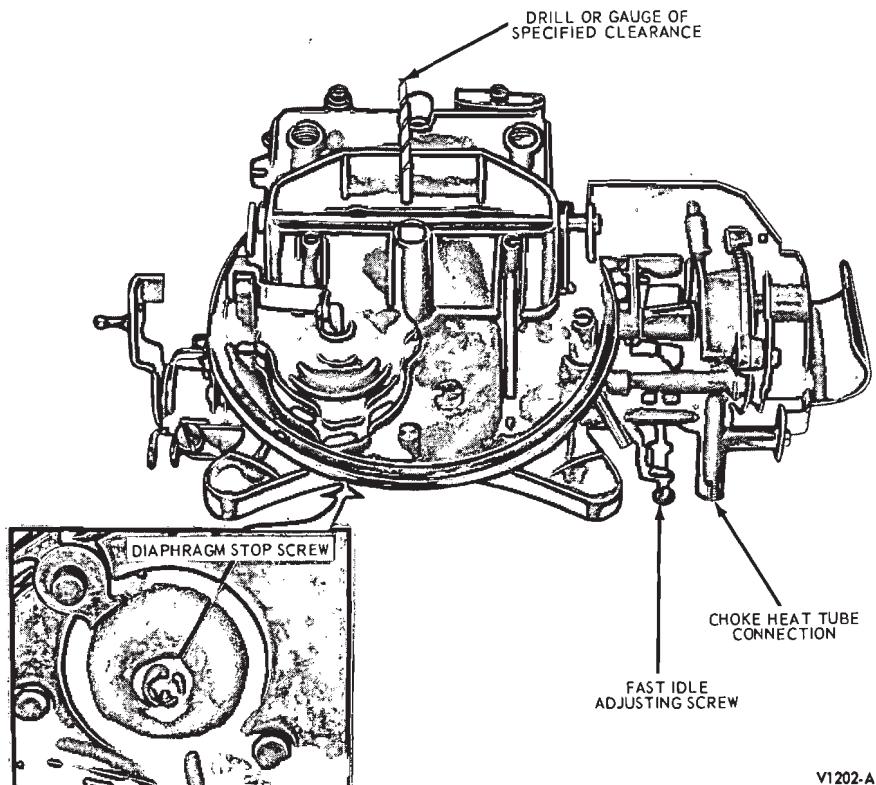


FIG. 5—Choke Plate Pulldown Clearance —Autolite Model 2100-D 2-V Carburetor

in the rich direction.

3. Disconnect and remove the choke heat tube from the choke housing.

4. Turn the fast idle adjusting screw outward **one full turn**.

5. Start the engine, then check for the specified clearance between the lower edge of the choke plate and the air horn wall (Fig. 5).

6. If the clearance is not within specifications, turn the diaphragm stop screw (located on the underside of the choke diaphragm housing) clockwise to decrease or counterclockwise to increase the clearance.

7. Connect the choke heat tube and

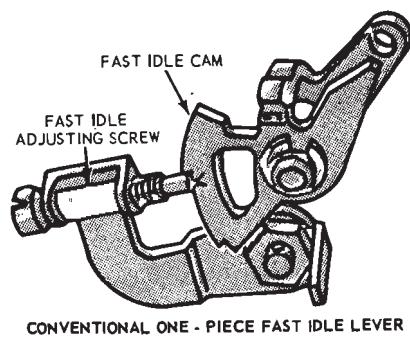
set the choke thermostatic spring housing to specifications. Adjust the fast idle speed to specifications.

Fast Idle Cam Clearance

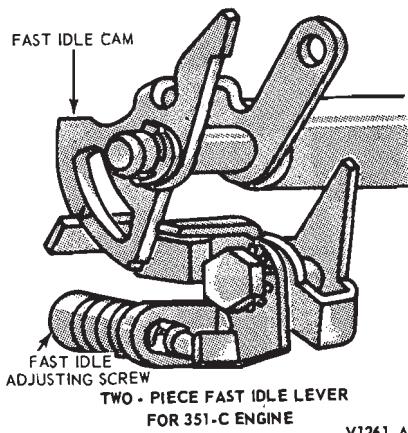
- Loosen the choke thermostatic spring housing retainer screws and set the housing 90 degrees in the rich direction.

- Position the fast idle speed screw at the kickdown step of the fast idle cam. **The kickdown step is identified by a V stamped on the cam (Fig. 6).**

On the 351-C engine, a two-piece fast idle lever is used to provide clear-



CONVENTIONAL ONE - PIECE FAST IDLE LEVER



V1261-A

FIG. 6—Fast Idle Levers Used on the Autolite Model 2100-D 2-V Carburetor

ance between the lever and manifold, and a tang on the top lever will align with the V mark on the cam (Fig. 6).

3. Be sure the cam is at the kickdown position while checking or adjusting the fast idle cam clearance.

Check for the specified clearance between the lower edge of the choke plate and the air horn wall. To adjust the clearance, turn the fast idle cam clearance adjusting screw clockwise to increase and counterclockwise to decrease the clearance.

4. Set the choke thermostatic spring housing to specifications. Adjust the anti-stall dashpot, idle speed and fuel mixture.

FUEL LEVEL FLOAT ADJUSTMENT—DRY

The dry float adjustment is a preliminary fuel level adjustment only. The final adjustment (Fuel Level Float Adjustment — Wet) must be made after the carburetor is mounted on the engine.

With the air horn removed, the float raised and the fuel inlet needle seated, check the distance between the top surface of the main body (gasket removed) and the top surface of the

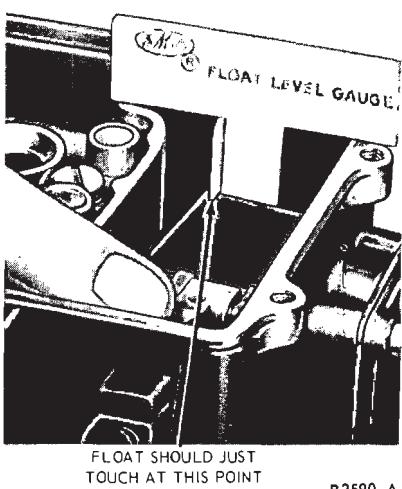


FIG. 7—Fuel Level Float Adjustment—Dry

float for conformance to specifications. Depress the float tab to seat the fuel inlet needle. Take the measurement near the center of the float at a point $1/8$ inch from the free end of the float.

If the cardboard float gauge is used, place the gauge in the corner of the enlarged end section of the fuel bowl (Fig. 7). The gauge should touch the float near the end, but not on the end radius.

If necessary, bend the tab on the float to bring the setting within the specified limits. This should provide the proper preliminary fuel level setting.

FUEL LEVEL FLOAT ADJUSTMENT—WET

1. Operate the engine to normalize engine temperatures, and place the vehicle on a flat surface as near level as possible. Stop the engine.

2. Remove the carburetor air cleaner assembly and anchor screw, if they have not been previously removed.

3. Remove the air horn retaining screws and the carburetor identification tag. Temporarily place the air horn and gasket in position on the carburetor main body and start the engine. Let the engine idle for a few minutes, then rotate the air horn out of the way and remove the air horn gasket to provide access to the float assembly.

4. While the engine is idling, use a standard depth scale to measure the vertical distance from the top machined surface of the carburetor main body to the level of the fuel in the fuel bowl (Fig. 8). The measurement

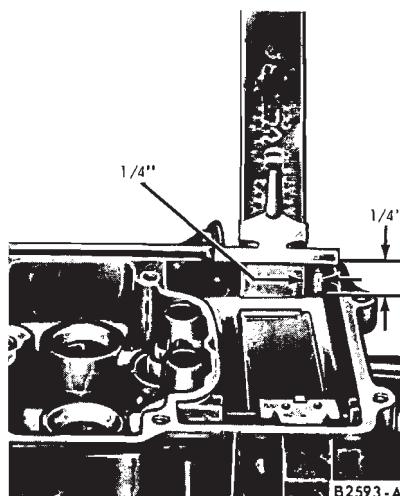


FIG. 8—Fuel Level Float Adjustment (Wet)

must be made at least $1/4$ inch away from any vertical surface to assure an accurate reading, because the surface of the fuel is concave (higher at the edges than in the center). Care must be exercised to measure the fuel level at the point of contact with the float with the fuel. Refer to the specifications for the correct fuel level (wet) setting.

5. If any adjustment is required, stop the engine to minimize the hazard of fire due to fuel spray when the float setting is disturbed. To adjust the fuel level, bend the float tab (contacting the fuel inlet valve) upward in relation to the original position to raise the fuel level, and downward to lower it. Each time an adjustment is made to the float tab to alter the fuel level, the engine must be started and permitted to idle for a few minutes to stabilize the fuel level. Check the fuel level after each adjustment until the specified level is achieved.

6. Install a new air horn gasket, the air horn assembly, carburetor identification tag and the retaining screws. Tighten the retaining screws. Install the air cleaner anchor screw and tighten to the specified torque.

7. Check the idle fuel mixture, idle speed adjustments and the carburetor dashpot adjustment (if so equipped). Adjust the carburetor as required.

8. Install the air cleaner assembly.

AIR HORN TO MAIN BODY GASKET

REMOVAL

1. Remove the air cleaner assembly. Remove the air cleaner anchor

screw.

2. Disconnect the automatic choke clean air tube at the carburetor.

3. Remove the automatic choke plate operating rod to choke lever retainer.

4. Remove the air horn retaining screws and lock washers, and the carburetor identification tag. Remove the air horn gasket.

INSTALLATION

1. Install a new air horn to main body gasket. Make sure all holes in the new gasket have been properly punched and that no foreign material has adhered to the gasket.

2. Position the air horn on the main body and gasket so that the choke plate operating rod fits into the opening in the choke housing lever. Install the choke plate rod retainer.

3. Install the air horn retaining screws and lock washers and the identification tag. Install the air cleaner anchor screw, and tighten to the specified torque.

4. Connect the automatic choke clean air tube to the carburetor.

5. Adjust the idle fuel mixture and idle speed and the dashpot as outlined in this section.

6. Install the carburetor air cleaner assembly.

FLOAT, NEEDLE VALVE AND SEAT, INLET SCREEN OR MAIN JETS

REMOVAL

1. Remove the carburetor air horn to main body gasket by following the procedure under Air Horn to Main Body Gasket Replacement.

2. With the use of a screwdriver, pry the float shaft retainer(s) from the fuel inlet seat. Remove the float, float shaft retainer and fuel inlet needle assembly.

3. If required, remove the fuel inlet needle seat, filter screen and the main jets with a jet wrench. Be sure the correct (specified) jets are installed.

INSTALLATION

1. If required, install the fuel inlet filter in the inlet valve seat bore. Install the valve seat and gasket. Install the fuel inlet needle valve.

2. Slide the float shaft into the float lever. Position the float shaft retainer on the float shaft.

3. Insert the float assembly into the fuel bowl and hook the float lever

tab under the fuel inlet needle clip. Insert the float shaft into the guides at the sides of the fuel bowl.

4. With the use of a screwdriver, position the float shaft retainer on the groove of the fuel inlet needle seat.

5. Refer to Float Adjustment—Dry, and perform a dry float fuel level adjustment on the float.

6. Install the carburetor air horn and gasket and related parts. Refer to Air Horn to Main Body Gasket Replacement.

7. Refer to Fuel Level Float Adjustment—Wet, and perform the wet fuel level adjustment procedures.

8. Adjust the idle fuel mixture and engine idle speed.

ACCELERATING PUMP DIAPHRAGM AND/OR ELASTOMER VALVE

REMOVAL

1. Remove the carburetor air horn to main body gasket following the procedure under Air Horn to Main Body Gasket Replacement.

2. Remove the accelerating pump operating rod retainer. To release the rod from the retainer, press the tab ends of the clip together; then, at the same time, press the rod away from the clip until it is disengaged. Remove the rod. Remove the accelerating pump cover, diaphragm assembly and spring.

3. If inspection proves it necessary to remove the Elastomer valve, grasp it firmly and pull it out. If the Elastomer valve tip broke off during removal, be sure to remove the tip from the fuel bowl. An Elastomer valve must be replaced whenever it is removed from the main body.

INSTALLATION

1. If the Elastomer valve was removed, lubricate the tip of a new valve and insert the tip into the accelerator pump cavity. Using needle nosed pliers, reach into the fuel bowl and grasp the valve tip. Pull the valve in until it seats, and cut off the tip forward of the retainer shoulder. Remove the tip from the bowl.

2. Position the new accelerating pump diaphragm assembly to the cover and place the cover and diaphragm assembly in position on the return spring and main body. The large end of the spring must face the Elastomer valve. Install the cover screws finger-tight. Push the accelerating pump plunger the full length of

travel and tighten the cover screws.

3. Position the accelerating pump operating rod in the inboard hole (hole closest to the pump plunger).

4. Adjust the accelerating pump stroke to specification.

5. Install the carburetor air horn and gasket. Refer to the Air Horn to Main Body Gasket Replacement.

CHOKE DIAPHRAGM ASSEMBLY

REMOVAL

1. Remove the air cleaner.

2. Remove the diaphragm cover attaching screws, then lift the cover, diaphragm assembly and spring from the air horn (Fig. 9). It will not be necessary to remove the diaphragm stop screw on the underside of the air horn.

3. Remove the diaphragm rod from the end of the lever.

INSTALLATION

1. Position the diaphragm spring in the air horn. Place the cover on top of the diaphragm, then attach the diaphragm rod to the end of the lever.

2. Install the cover attaching screws and tighten to the specified torque.

3. Set the choke plate pulldown and fast idle cam clearance.

4. Tighten the air cleaner anchor screw to the specified torque to help provide a vacuum seal between the air horn and main body. The choke diaphragm vacuum passage is in the rear portion of the carburetor.

5. Install the air cleaner.

POWER VALVE TEST

A power valve must not be replaced unless it is leaking sufficiently to cause an unadjustable rough engine idle condition. Fuel accumulation in the power valve cover does not necessarily indicate a damaged power valve. Fuel vapors will be drawn into the vacuum side of the power valve and condense during periods of deceleration. Leakage in the power valve area can be caused by an improperly tightened cover or damaged gaskets. Any gasket sealing deficiencies must be corrected before the power valve is replaced.

If power valve leakage is suspected, the following test procedure must be performed.

1. Remove the carburetor from the intake manifold. Invert the carburetor.

2. Remove the glass bowl from the fixture (Fig. 10). Fill the bowl half-full of water. Install the bowl on the fixture.

3. Connect a line from the vacuum pump to the fitting on top of the fixture. Insert the large OD end of the wand into the tube and attach the other end of the tube to the fitting on the side of the fixture. Slip the rubber gasket (furnished with tool) over the small OD end of the wand. Hold this end against the power valve vacuum pick-up port (Fig. 10).

4. Look for bubble formations in the water in the bowl. A continuous

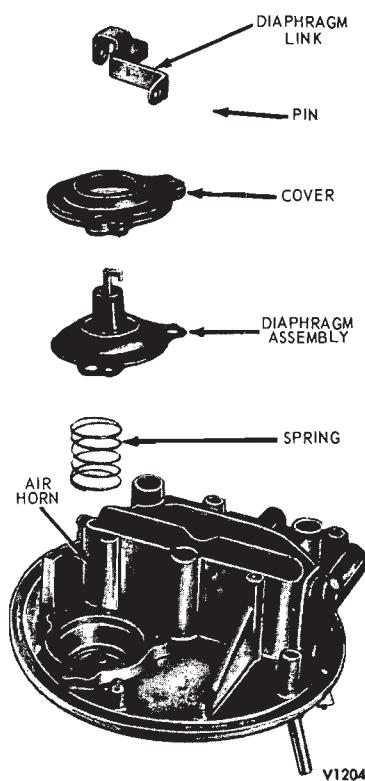


FIG. 9—Choke Diaphragm Assembly

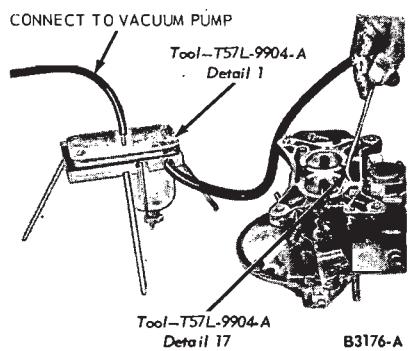


FIG. 10—Typical Power Valve Test

stream of bubbles indicates leakage through the power valve diaphragm or gasket, or the cover or gasket.

If leakage is encountered, the power valve, power valve gasket, cover, and cover gasket should be replaced one at a time with a new part

and the test repeated until the source of leakage has been found. If the source of leakage can not be found, the gasket seats are damaged and the appropriate parts should be replaced.

A few bubbles may be noticed immediately upon attaching the vacuum

line. The bubbling should stop within approximately 15 seconds or after the air has been removed from the system. If no bubbles are seen, the power valve, gaskets and cover are sealing properly.

3 MAJOR REPAIR OPERATIONS

DISASSEMBLY

To facilitate working on the carburetor, and to prevent damage to the throttle plates, install carburetor legs on the base. If legs are unavailable, install 4 bolts (about 2 1/4 inches long of the correct diameter) and 8 nuts on the carburetor base.

Use a separate container for the component parts of the various assemblies to facilitate cleaning, inspection and assembly.

Refer to Part 23-01 for removal and installation and cleaning and inspection.

The following is a step-by-step sequence of operations for completely overhauling the carburetor. However certain components of the carburetor may be serviced without a complete disassembly of the entire unit. For a complete carburetor overhaul, follow all of the steps. To partially overhaul a carburetor or to install a new gasket kit, follow only the applicable steps.

AIR HORN

1. Remove the air cleaner anchor screw.
2. Remove the automatic choke control rod retainer.
3. Remove the air horn retaining screws, lock washers and the carburetor identification tag. Remove the air horn and air horn gasket.
4. Remove the choke control rod by loosening the screw that secures the choke shaft lever to the choke shaft. Remove the rod from the air horn. Slide the plastic dust seal out of the air horn.
5. Remove the choke diaphragm assembly (Fig. 9).

6. If it is necessary to remove the choke plate, remove the staking marks on the choke plate retaining screws and remove the screws. Remove the choke plate by sliding it out of the shaft from the top of the air

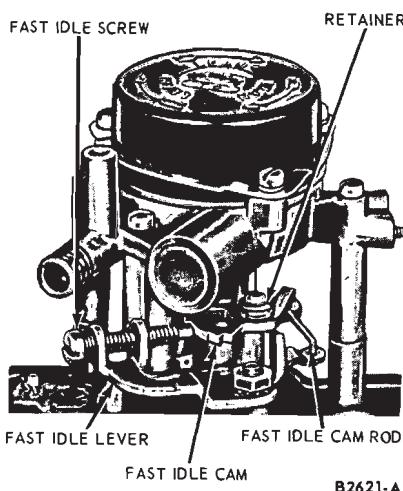


FIG. 11—Fast Idle Cam and Fast Idle Lever

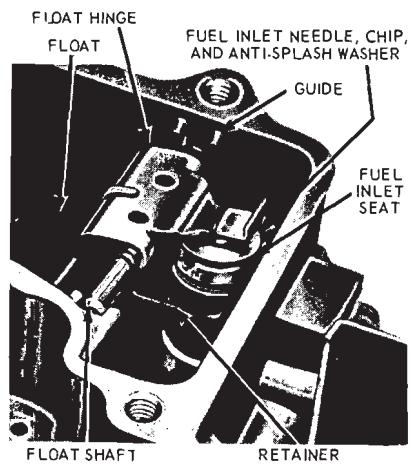


FIG. 12—Float Assembly

horn. Slide the choke shaft out of the air horn.

If the tips of the choke plate screws are flared excessively, file off the flared portion to prevent damage to the threads in the shaft.

AUTOMATIC CHOKE

1. Remove the fast idle cam retainer (Fig. 11).
2. Remove the thermostatic choke spring housing retaining screws and remove the clamp, housing and gasket.
3. Remove the choke housing assembly retaining screws. If the air horn was not previously removed, remove the choke control rod retainer. Remove the choke housing assembly, gasket and the fast idle cam and rod from the fast idle cam lever.
4. Remove the choke lever retaining screw and washer. Remove the choke lever and fast idle cam lever from the choke housing.

MAIN BODY

1. With the use of a screwdriver,

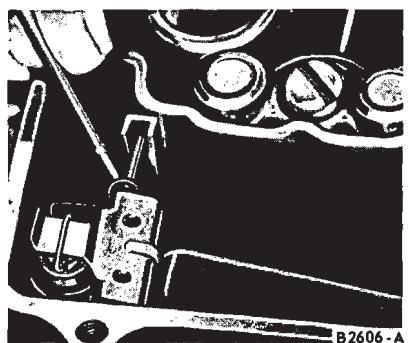


FIG. 13—Float Shaft Retainer Removal or Installation

pry the float shaft retainer from the fuel inlet seat (Figs. 12 and 13). Remove the float, float shaft retainer and fuel inlet needle assembly. Remove the retainer and float shaft from the float lever.

2. Remove the fuel inlet needle, seat, filter screen, and the main jets with a jet wrench.

3. Remove the booster venturi screw (accelerator pump discharge), air distribution plate, booster venturi and gasket. Invert the main body and let the accelerating pump discharge

weight and ball fall into the hand.

4. Remove the accelerator pump operating rod from the over-travel lever and the retainer. To release the operating rod from the over-travel lever retainer, press the ends of the retainer together; then, at the same time, press the rod away from the retainer until it is disengaged. Remove the rod and retainer.

5. Remove the accelerating pump cover retaining screws. Remove the accelerating pump cover, diaphragm assembly and spring (Fig. 14).

6. If it is necessary to remove the Elastomer valve, grasp it firmly and

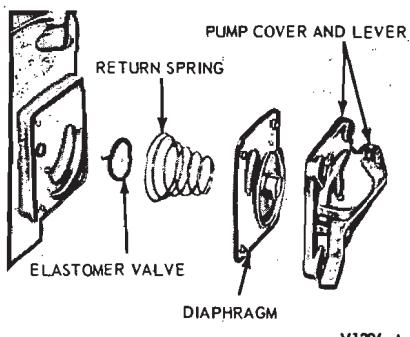


FIG. 14—Accelerating Pump Assembly

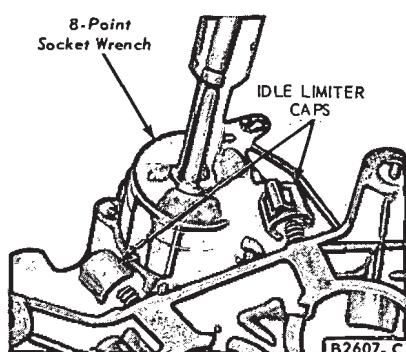


FIG. 15—Power Valve Removal or Installation

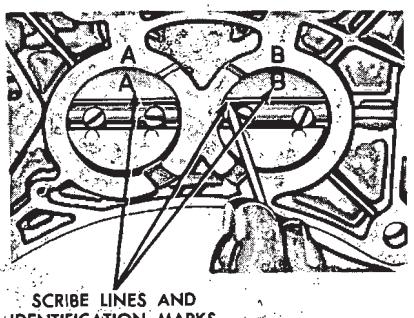


FIG. 16—Throttle Plate Removal

pull it out. If the Elastomer valve tip broke off during removal, be sure to remove the tip from the fuel bowl. An Elastomer valve must be replaced whenever it has been removed from the carburetor.

7. Invert the main body and remove the power valve cover and the gasket. Remove the power valve with a box wrench or socket wrench (Fig. 15). Remove the power valve gasket. Discard the gasket.

8. Remove the idle fuel mixture adjusting screws (needles) and the springs. Remove the limiters from the adjusting screws.

9. If necessary, remove the nut and washer securing the fast idle adjusting lever assembly to the throttle shaft; and remove the lever assembly. If necessary, remove the idle screw and the retainer from the fast idle adjusting lever.

10. Remove the anti-stall dashpot or solenoid (if so equipped).

11. If it is necessary to remove the throttle plates, lightly scribe the throttle plates along the throttle shaft, and mark each plate and its corresponding bore with a number or letter for proper installation (Fig. 16).

12. Slide the throttle shaft out of the main body.

Clean and inspect the carburetor component parts. Refer to Part 23-01, for the proper procedure.

ASSEMBLY

Make sure all holes in the new gaskets have been properly punched and that no foreign material has adhered to the gaskets. Make sure the accelerating pump diaphragm is not torn or cut.

The Autolite Model 2100-D 2-V carburetor assembly is shown in Fig. 17.

MAIN BODY

1. Slide the throttle shaft assembly into the main body.

2. Refer to the lines scribed on the throttle plates and install the throttle plates in their proper location with the screws snug, but not tight.

3. Close the throttle plates. Invert the main body, and hold it up to the light. Little or no light should show between the throttle plates and the throttle bores. Tap the plates lightly with a screwdriver handle to seat them. Hold the throttle plates closed and tighten and stake the retaining screws. When staking the screws, support the shaft and plate on a block of

wood or a metal bar to prevent bending of the shaft.

4. If necessary, install the fast idle screw pin and the screw on the fast idle adjusting lever.

5. Install the anti-stall dashpot, if so equipped.

6. If the fast idle lever was removed, place the fast idle adjusting lever assembly on the throttle shaft and install the retaining washer and nut (Fig. 22).

7. If the Elastomer valve was removed, lubricate the tip of a new Elastomer valve and insert the tip into the accelerator pump cavity center hole. Using a pair of needle nosed pliers, reach into the fuel bowl and grasp the valve tip. Pull the valve in until it seats in the pump cavity wall and cut off the tip forward the retaining shoulder. Remove the tip from the bowl.

8. Install the accelerating pump diaphragm return spring on the boss in the chamber (Fig. 14). Insert the diaphragm assembly in the cover and place the cover and diaphragm assembly into position on the main body. Install the cover screws.

9. Insert the accelerating pump operating rod into the inboard hole of the accelerating pump actuating lever. Position the accelerating pump operating rod retainer over the specified hole (Part 23-01) in the over-travel lever. Press the ends of the retainer together; then, at the same time, insert the operating rod through the retainer and the hole in the over-travel lever. Release the ends of the retainer to secure the rod.

10. Invert the main body. Install the power valve (enrichment valve) and new gasket with a wrench (Fig. 15). Tighten the valve securely.

11. Install the idle mixture adjusting screws (needles) and springs (Fig. 17). Turn the needles gently with the fingers until they just touch the seat, then back them off $1\frac{1}{2}$ turns for a preliminary idle fuel mixture adjustment. Do not install the idle mixture limiters at this time. Install the power valve cover and new gasket. The power valve cover must be installed with the limiter stops on the cover in position to provide a positive stop for the tabs on the idle adjusting limiters.

12. Install the main jets and the fuel inlet seat, filter screen, and new gasket. Be sure the correct jets are installed.

13. Install the fuel inlet needle assembly in the fuel inlet seat. Fuel inlet needles and seats are matched

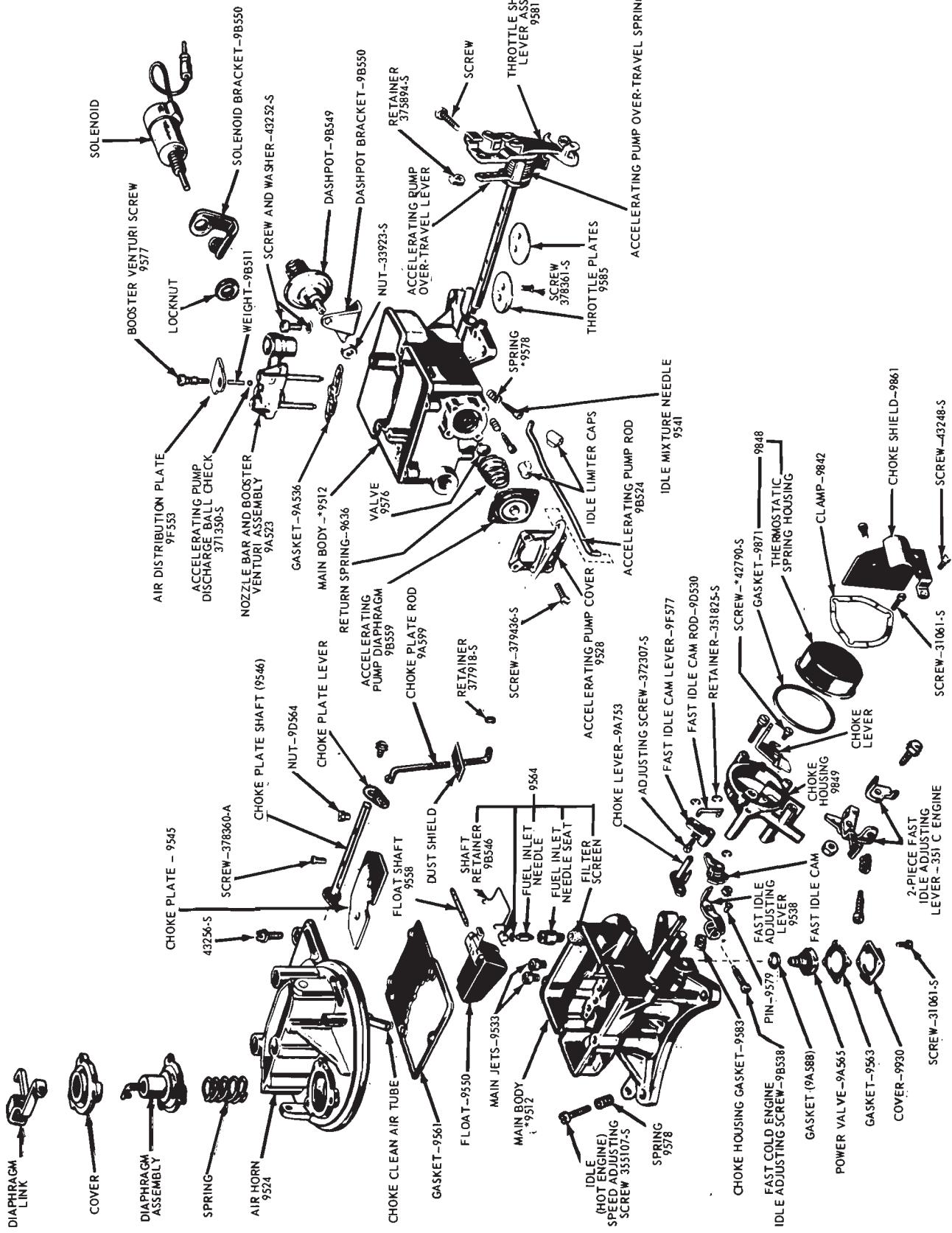


FIG. 17.—Autolite Model 2100-D 2-V Carburetor Assembly

assemblies. Be sure the correct needle and seat are assembled together.

14. Slide the float shaft into the float lever (Fig. 12). Position the float shaft retainer on the float shaft.

15. Insert the float assembly into the fuel bowl and hook the float lever tab under the fuel inlet needle assembly. Insert the float shaft into its guides at the sides of the fuel bowl.

16. With the use of a screwdriver, position the float shaft retainer in the groove on the fuel inlet needle seat (Fig. 13). Check the float setting.

17. Drop the accelerating pump discharge ball into the passage in the main body. Seat the ball with a brass drift and a light hammer. Make sure the ball is free in the bore. Drop the accelerating pump discharge weight on top of the ball. Position the new booster venturi gasket and the booster venturi in the main body. Install the air distribution plate and the accelerator pump discharge screw. Tighten the screw.

AUTOMATIC CHOKE

1. Position the fast idle cam lever on the thermostatic choke shaft and lever assembly. The bottom of the fast idle cam lever adjusting screw must rest against the tang on the choke lever. Insert the choke lever

into the rear of the choke housing. Position the choke lever so that the hole in the lever is to the left side of the choke housing.

2. Install the fast idle cam rod on the fast idle cam lever. Place the fast idle cam on the fast idle cam rod and install the retainer. Place the choke housing vacuum pick-up port to main body gasket on the choke housing flange. Position the choke housing on the main body and at the same time, install the fast idle cam on the hub on the main body. Position the gasket, and install the choke housing retaining screws. Install the fast idle cam retainer. Install the thermostatic spring housing.

AIR HORN

Refer to Fig. 17 for the correct location of the parts.

1. If the choke plate shaft was removed, position the shaft in the air horn, then install the choke plate rod on the end of the choke shaft.

2. If the choke plate was removed, insert the choke plate into the choke plate shaft. Install the choke plate screws snug, but not tight. Check for proper plate fit, binding in the air horn and free rotation of the shaft by moving the plate from the closed position to the open position. If neces-

sary, remove the choke plate and grind or file the plate edge where it is binding or scraping on the air horn wall. If the choke plate and shaft moves freely, tighten the choke plate screws while holding the choke in the fully closed position. Stake the screws. When staking the screws, support shaft and plate on a block of wood or a metal bar to prevent bending of the shaft.

3. Position the main body gasket and the choke rod plastic seal on the main body. Position the air horn on the main body and gasket so that the choke plate rod fits through the seal and the opening in the main body.

4. Insert the end of the choke plate rod into the automatic choke lever. Install the air horn retaining screws and the carburetor identification tag. Tighten the retaining screws. Install the choke plate rod retainer. Install the air cleaner anchor screw. Tighten the air cleaner anchor screw to the specified torque.

5. Perform the automatic choke plate clearance adjustment after the carburetor has been installed on the vehicle. Refer to Part 23-01, and perform the required Performance Adjustments.

6. After the specified air-fuel is obtained, install the idle mixture limiter caps.

4 SPECIFICATIONS

AUTOLITE MODEL 2100D CARBURETOR

Vehicle	Engine Displacement		Transmission		Carburetor Number (9510)			Air-Fuel Ratio							
Ford, Fal, F/Lane, Mont, Must	302		Manual			DOAF-C			12.05						
Ford, Fal, F/Lane, Mont, Must	302		Automatic			DOAF-D			12.50						
Ford, Fal, F/Lane, Mont, Must	302		Automatic			DOAF-U (Air Conditioned)			12.50						
Ford, Mustang, Cougar	351W		Manual			DOAF-E			12.05						
Ford, Mustang, Cougar	351W		Automatic			DOAF-F			12.50						
Ford, Mustang, Cougar	351W		Automatic			DOAF-V Air Conditioned			12.50						
Fairlane, Montego	351C		Manual			DOOF-K			12.05						
Fairlane, Montego	351C		Automatic			DOOF-L			12.50						
Fairlane, Montego	351C		Automatic			DOOF-M Air Conditioned			12.50						
Carburetor Number (9510)	DOAF-C	DOAF-D	DOAF-U	DOAF-E	DOAF-F	DOAF-V	DOOF-K	DOOF-L	DOOF-M						
CARBURETOR SIZE															
Throttle Bore Diameter	1.56				1.68										
Venturi Diameter	1.08				1.23										
Air Flow (cfm)	2.87				3.51										
FUEL INLET SYSTEM															
Fuel Level (Wet) \pm 1/32					13/16										
Float Setting (Dry) \pm 1/32					7/16										
FUEL BOWL VENTS					0.400										
IDLE SYSTEM															
Idle Jet	0.028	0.025			0.031										
Idle Bleed		0.101			0.110										
Idle Channel Restriction	0.033	0.036			0.052										
Idle Discharge Port		0.078			0.089										
Idle Transfer Slot	0.030-0.200	0.030-0.180			0.030-0.200										
Support Identification	①	AAF	SR	CCA	SR	CCB									
MAIN FUEL SYSTEM															
Main Metering Jet	48F		54F		55F		57F		55F						
High Speed Bleed	0.052		0.038		0.046		0.038		0.046						
Anti-Syphon Bleed	0.029		0.033		0.035		0.031								
Power Jet	0.033		9.5		8.5		0.033		0.037						
Power Valve Timing (In. Hg.)	8.5	7.5	Red		Plain		9.5		9.5						
Power Valve Identification	Plain		Green		Red		Plain		Red						
Air Distribution Plate															
Spark Port							0.050-0.085								
PUMP SYSTEM	No. 3	No. 2	No. 3	Inboard	No. 4	No. 3									
Rod Position-Overtravel Lever	18-23	12-17	18-23	23-28	24-28	23-28	18-23	18-23							
Pump Lever	0.024		0.012		0.031										
Capacity/10 Strokes															
Pump Jet Diameter	Steel		Aluminum				Steel								
Pump Bleed															
Pump Weight															
CHOKE SYSTEM	TN	I-Rich	TW	2-Lean	Index	TO									
Bimetal & Cap Identification		0.150	0.230	0.200	0.220	1-Rich									
Cap Setting		0.130	0.190	0.170	0.190	0.190									
Pulldown Setting \pm .010		0.060	①		0.076										
Fast Idle Cam Clearance		0.070	B		0.060										
Decoke (Minimum)		A													
Choke Air Restriction															
Cam Identification															
DASHPOT	Solenoid Equipped	1/8"	Solenoid Equipped	Solenoid Equipped	1/8	Solenoid Equipped	1/8	Solenoid Equipped							
Adjustment-If Equipped- \pm 1/64															
IDLE SPEED	800/500 ^② 1400	575 1500	600/500 ^③ 1300	700/500 ^③ 1300	575 1600	600/500 ^③ 1600	700/500 ^③ 1500	600 1500	600/500 ^③						
TORQUE REQUIREMENT							11-16 Ft-Lbs								
Air Cleaner Anchor Screw															
① Information not available from General Parts Division. A Technical Service Bulletin will be issued when the information is obtained.															
② Headlamps on Hi-Beam-Air Conditioning OFF (if equipped)															
③ Higher Idle Speed with Throttle Solenoid energized-Lower Idle Speed with Throttle Solenoid De-energized.															

23-04-12

Autolite Model 2100-D 2-V Carburetor

23-04-12

AUTOLITE MOD 2100-D 2-V CARBURETOR

Vehicle	Engine CID	Transmission	Carburetor No. (9510)		Air-Fuel Ratio
Carburetor Number (9510)	DOAF-Y	DOAF-Z	DOAF-AA	DOAF-J	DOAF-T
Ford, Mercury	390	Manual	DOAF-Y		13.33
Ford, Mercury	390	Automatic	DOAF-Z		13.33
Ford, Mercury	390	Automatic	DOAF-AA	Air Conditioned	13.33
Ford, Mercury	429	Automatic	DOAF-J		12.20
Ford, Mercury	429	Automatic	DOAF-T	Air Conditioned	12.20
CARBURETOR SIZE					
Throttle Bore Diameter			1.680		
Venturi Diameter			1.230		
Air Flow (cfm)			351		
FUEL INLET SYSTEM			13/16		
Fuel Level (Wet) \pm 1/64			7/16		
Float Setting (Dry) \pm 1/32					
FUEL BOWL VENTS			0.400		
Internal (2)					
IDLE SYSTEM					
Idle Jet	0.033		0.031		
Idle Bleed			0.110		
Idle Channel Restriction	0.055		0.046		
Idle Discharge Port			0.089		
Idle Transfer Slot			0.030-0.200		
Support Identification	S N		CC B		
MAIN FUEL SYSTEM					
Main Metering Jet			55F		
High Speed Bleed	0.038		0.046		
Anti-Syphon Bleed			0.031		
Power Valve Cavity Bleed					
Power Jet	0.033		0.037		0.033
Power Valve Timing (In. Hg.)			9.5		
Power Valve Identification			Red		
Air Distribution Plate			Yes		
Spark Port			0.050-0.085		
PUMP SYSTEM					
Rod Position Overtravel Lever			No. 3		
Pump Lever			Inboard		
Capacity/10 Strokes (cc)			18-23		
Pump Jet Diameter			0.031		
Pump Bleed			0.012		
Pump Weight			Aluminum		
CHOKE SYSTEM					
Bimetal & Cap Identification	TN		TW		TW
Cap Setting	I-Rich				
Pulldown Setting (\pm 0.010)-Inch	0.210		0.200		0.200
Fast Idle Cam Clearance	0.170		0.160		0.160
Decchoke (Min.)		0.060	0.076		0.063
Choke Air Restriction			B		
Cam Identification					
DASHPOT					
Adjustment-If Equipped (\pm 1/64-Inch)	Solenoid-Equipped	1/8	Solenoid-Equipped	1/8	Solenoid-Equipped
IDLE SPEED					
Idle rpm ①	750/500 ②	575	600/500 ③	590	600/500 ②
Fast Idle rpm - (Kickdown Step)	1400		1500		1400
TORQUE REQUIREMENT					11-16 Ft-Lbs
Air Cleaner Anchor Screw					

① Headlamps on Hi-Beam - Air Conditioning OFF (if equipped)

② Higher idle speed with throttle solenoid energized - lower idle speed with throttle solenoid de-energized

PART 23-05 Autolite Model 4300 4-V Carburetor

The Autolite Model 4300 4-V carburetor is used on all 4-venturi applications except the Cobra Jet and BOSS engines.

COMPONENT INDEX	Page	COMPONENT INDEX	Page
ACCELERATING PUMP		CHOKE PLATE PULLDOWN AND FAST IDLE CAM CLEARANCE	
Discharge Check Valve Disc	05-06	Choke Plate Pulldown	05-03
Inlet Ball Check	05-06	Fast Idle Cam Clearance	05-04
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Needle Valve	05-06		
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Stroke Adjustment	05-03	FUEL LEVEL FLOAT	
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CARBURETOR			
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Disassembly	05-06	Assembly	05-07
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DESCRIPTION

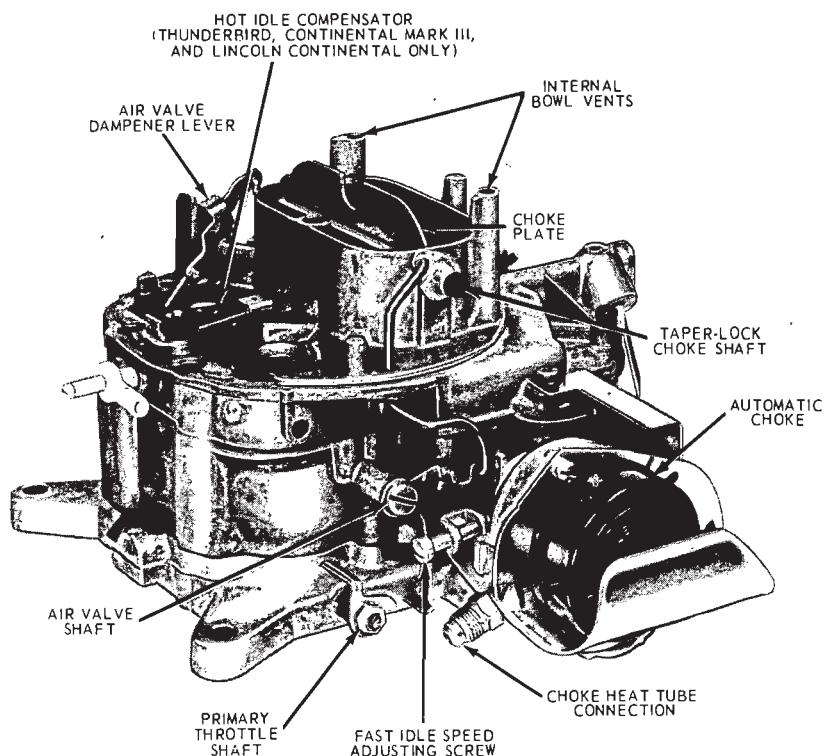
The Autolite Model 4300 4-V Carburetor (Figs. 1, 2 and 3) is a three-piece, separately cast design consisting of the air horn, main body and throttle body.

A cast-in center fuel inlet has provision for a supplementary fuel inlet system. The fuel bowl is vented by an internal balance vent. On the

Thunderbird, Continental Mark III and Lincoln Continental, a hot idle compensator is used.

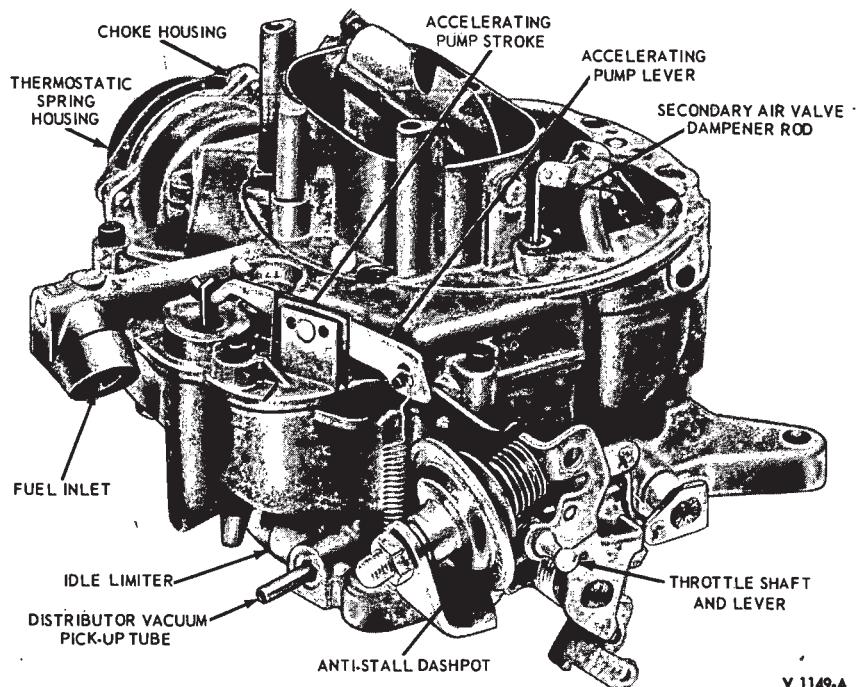
The main (primary) fuel system has booster-type venturis cast integral with the air horn and the main venturis are cast integral with the main body. The secondary throttle plates are mechanically operated from the primary linkage. Air valve plates are located above the secondary main

venturis and an integral hydraulic dashpot dampens sudden movement of the air valve plates to help prevent flutter and erratic engine operation. A single fuel bowl supplies both the primary and secondary fuel systems. Pontoon-type floats are used to help cornering and hill climbing capability. The accelerating pump is of the piston-type, located in the fuel bowl.



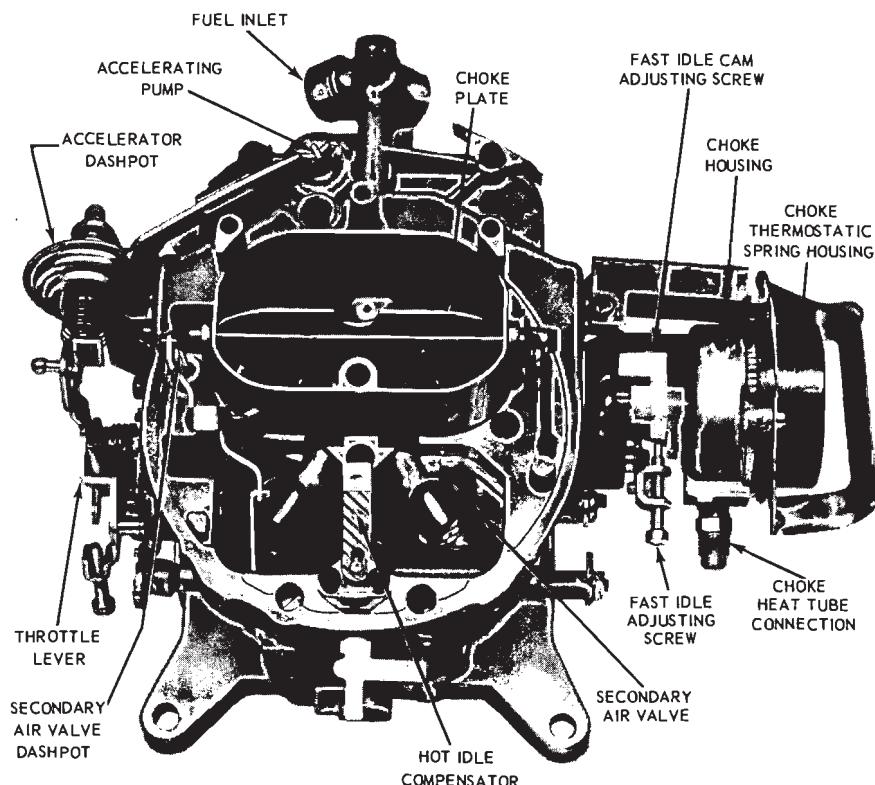
V1268-A

FIG. 1—Autolite Model 4300 4-V Carburetor—Right Rear 3/4 View



V 1149-A

FIG. 2—Autolite Model 4300 4-V Carburetor—Left Front 3/4 View



V1297-A

FIG. 3—Autolite Model 4300 4-V Carburetor—Top View

1 IN-VEHICLE ADJUSTMENTS AND REPAIRS

PERFORMANCE ADJUSTMENTS

The following carburetor adjustments are described and illustrated in Part 23-01 of this Group:

- Idle Speed and Fuel Mixture
- Fast Idle Speed
- Anti-Stall Dashpot
- Automatic Choke

To enable the vehicle to operate within the range of Government regulations to control engine emissions, the specifications for the adjustments were determined to help provide the most desirable engine performance characteristics. These specifications are contained in Part 23-01, and are arranged in chart form for ready reference.

The adjustment and repair procedures described in this part are performed less frequently, and are unique to the Autolite Model 4300 4-V carburetor. The specifications for these adjustments and other technical

data are listed at the end of this Part.

ACCELERATING PUMP STROKE ADJUSTMENT

The accelerating pump stroke has been set to help keep the exhaust emission level of the engine within the specified limits. The additional holes provided for pump stroke adjustment are for adjusting the stroke for specific engine applications. The stroke should not be changed from the specified setting.

If the pump stroke has been changed from the specified setting refer to the following instructions to correct the stroke to specification. Before adjusting the accelerating pump stroke, measure the height of the pump piston stem as shown in Fig. 4. Bend the pump control rod to correct the piston stem height to specifications.

If it is necessary to correct the setting, the pump stroke can be altered

as follows:

1. Remove the pump pivot pin retainer. Remove pivot pin.
2. Insert the pivot pin into the desired hole.
3. Install the pivot pin retainer. Position the pump rod end into the pump arm and install the retainer.

CHOKE PLATE PULLDOWN AND FAST IDLE CAM CLEARANCE

CHOKE PLATE PULLDOWN

1. Remove the air cleaner, then remove the choke thermostatic spring housing from the carburetor. To remove the thermostatic spring housing from the carburetor installed on the engine, refer to Thermostatic Spring Housing and Gasket Replacement.

2. Bend a wire gauge of 0.036-inch diameter at a 90 degree angle approximately 1/8-inch from one end.

3. Block the throttle about half-open so the fast idle cam does not

contact the fast idle adjustment screw, then insert the bent end of the wire gauge between the lower edge of the piston slot and the upper edge of the right hand slot in the choke housing (Fig. 5).

4. Pull the choke piston lever counterclockwise until the gauge is snug in the piston slot. Hold the wire gauge in place by exerting light pressure in a rearward direction on the choke piston lever. Check the choke plate

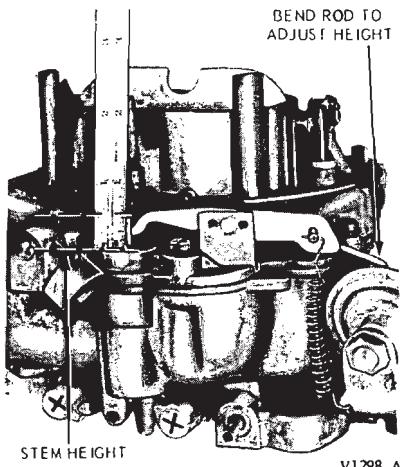


FIG. 4—Accelerating Pump Piston Stem Height and Pump Stroke

clearance (Pull down) between the lower edge of the choke plate and the wall of the air horn.

5. To adjust the choke plate clearance, loosen the hex head screw (left hand thread) on the choke plate shaft (Fig. 5) and pry the link away from the tapered shaft.

Use a drill gauge **0.010-inch under the specified clearance** between the lower edge of the choke plate and the wall of the air horn. Hold the choke plate against the gauge and maintain a light pressure in a rearward direction on the choke lever.

With the choke piston snug against the 0.036-inch wire gauge and the choke plate against the drill gauge, tighten the hex head screw (left hand thread) on the choke plate shaft.

The use of a 0.010-inch undersize drill gauge is to allow for tolerances in the linkage. Use a drill gauge equal to the size of the specified clearance to make a final check.

6. Install the gasket and thermostatic spring housing on the choke housing. Install the spring housing retainer and screws.

FAST IDLE CAM CLEARANCE ADJUSTMENT

1. Rotate the spring housing coun-

DRILL GAUGE OF SPECIFIED CLEARANCE SIZE

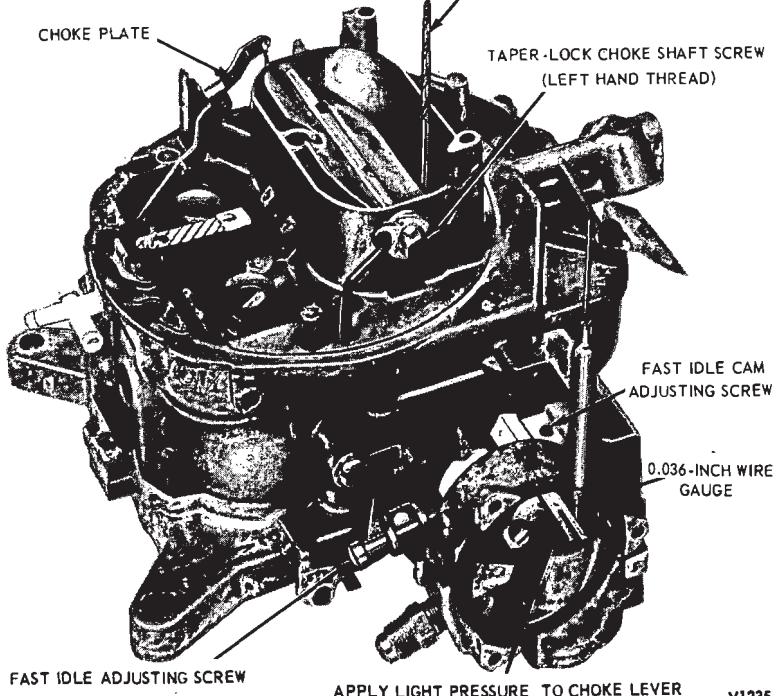


FIG. 5—Choke Plate Pull-Down and Fast Idle Cam Adjustment

terclockwise (rich direction) to align the center index mark on the choke housing with the index mark on the spring housing. Rotate the spring housing an additional 90 degrees counterclockwise and tighten the retaining screws.

2. Position the fast idle speed adjusting screw end on the kickdown (center) step of the fast idle cam. Check the clearance between the lower edge of the choke plate and the air horn wall. Turn the fast idle cam adjusting screw inward to increase the clearance or outward to decrease the clearance. Make sure the fast idle speed adjusting screw stays at the kickdown step of the fast idle cam during the adjustment.

On the 351 CID C engine, a two-piece fast idle lever is used to provide clearance between the lever and manifold, and a tang on the top lever will align with the V mark on the cam.

3. Set the thermostatic choke housing to the specified index mark and tighten the retaining screws.

4. If the choke plate clearance and fast idle cam linkage adjustment was performed with the carburetor on the engine, adjust the engine idle speed and fuel mixture. Adjust the anti-stall dashpot (if so equipped).

DECHOKE CLEARANCE

1. Open the throttle plate to the wide-open-throttle position and hold.

2. Rotate the choke plate towards the closed position until the pawl on the fast idle speed lever contacts the fast idle cam.

3. Check the clearance between the lower edge of the choke plate and the air horn wall.

4. Adjust the clearance to specifications by bending the pawl on the fast idle speed lever forward to increase or backward to decrease the clearance.

FUEL LEVEL FLOAT AND AUXILIARY (SUPPLEMENTAL) VALVE SETTING

FLOAT SETTING

To simplify parallel setting of the dual pontoons, refer to Fig. 6 for the construction of an adjustable float gauge and a float tab bending tool.

1. Adjust gauge to the specified height.

2. Insert gauge into the air horn outboard holes (Fig. 7).

3. Check the clearance and alignment of the pontoons to the gauge.

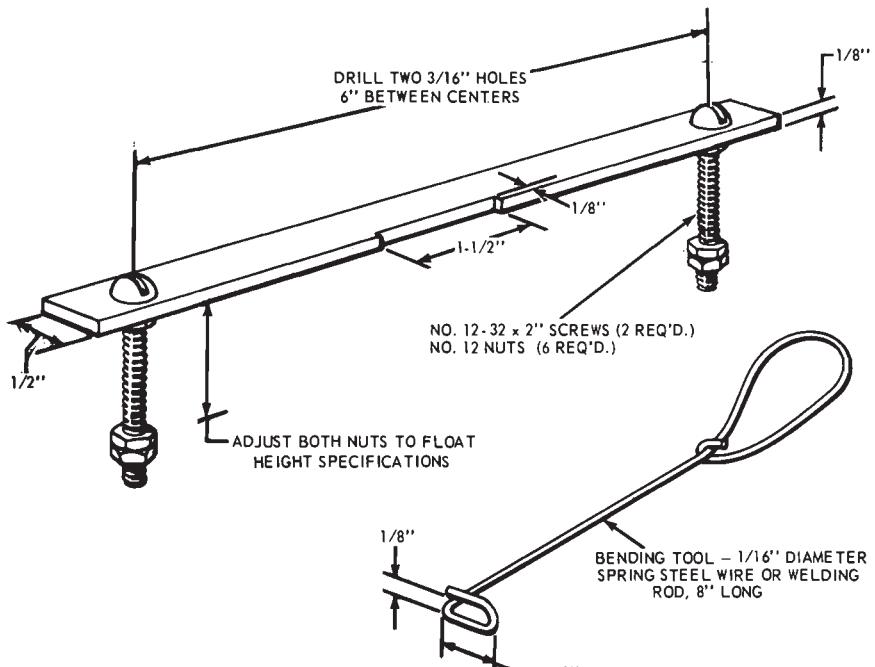


FIG. 6—Float Gauge and Bending Tool Details

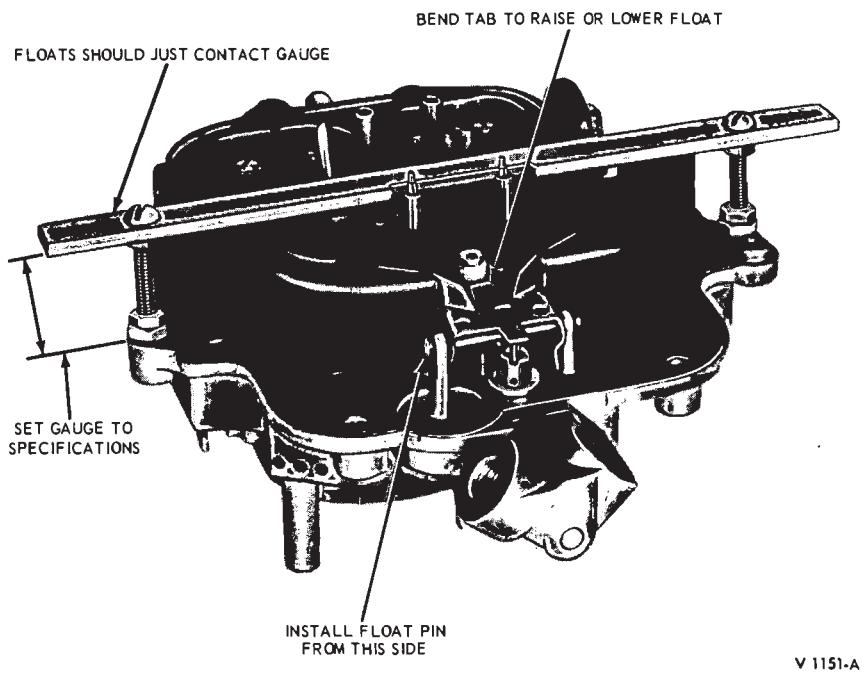


FIG. 7—Float Setting

Both pontoons should just touch the gauge for the proper setting. Align the pontoons if necessary by slightly twisting the pontoons.

If it is necessary to adjust the float clearance, bend the primary needle tab downward to raise the float and upward to lower the float.

To bend the tabs with the float bending tool, the procedure is as follows:

To Raise the Float, insert the open end of the bending tool to the RIGHT side of the float lever tab and between the needle and float hinge. Raise the float lever off the needle and bend the tab downward.

To Lower The Float, insert the open end of the bending tool to the LEFT side of the float lever tab, between the needle and float hinge. Support the float lever and bend the

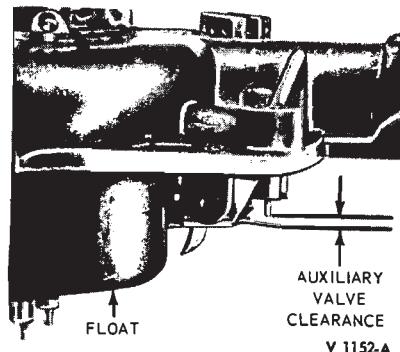


FIG. 8—Auxiliary (Supplemental) Valve Setting

tab upward.

AUXILIARY (SUPPLEMENTAL) VALVE SETTING

Check the auxiliary valve clearance (Fig. 8). If it is necessary to adjust the auxiliary valve and float tab to the specified clearance, use the bending tool shown in Fig. 7.

AIR HORN TO MAIN BODY GASKET

REMOVAL

1. Remove the air cleaner assembly.
2. Disconnect the fuel inlet line from the air horn.
3. Remove the choke clean air pickup connecting tube from the air horn.
4. Remove the choke control rod retainer from the automatic choke lever. Separate the rod from the lever.
5. Remove the accelerator pump rod retainer or spring from the pump lever. Separate the rod from the lever.
6. Remove the air cleaner anchor screw and the air horn to main body retaining screws, and the carburetor identification tag.
7. Lift the air horn off the fuel bowl.
8. Remove the gasket.

INSTALLATION

1. Make sure all holes in the new gaskets have been properly punched and that no foreign material has adhered to the gaskets. Gasket surfaces must be clean and flat and free of nicks or burrs.
2. Install the gasket on the carburetor main body.
3. Carefully position the air horn assembly over the main body. Guide

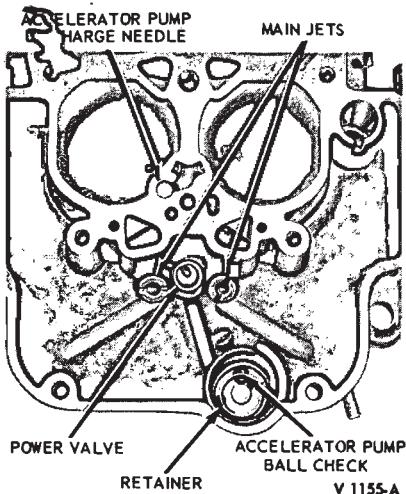


FIG. 9—Main Body Valves and Jets Autolite Model 4300 4-V

the accelerator pump plunger and the secondary throttle dashpot piston into their chambers as the air horn is gently lowered into position.

4. Install the longest of the air horn retaining screws in the left rear hole.

5. Install the other air horn retaining screws and the carburetor identification tag.

6. Insert the accelerator pump control rod into the pump lever. Install the pin and the retainer or spring.

7. Insert the choke control rod end into the automatic choke lever. With long nose pliers, install the retainer.

8. Connect the fuel inlet line.

9. Connect the choke clean air pickup and heat tubes.

10. Install the air cleaner.

11. Adjust the idle fuel mixture and engine curb idle speed.

2 MAJOR REPAIR OPERATIONS

DISASSEMBLY

To facilitate working on the carburetor, and to prevent damage to the throttle plates, install carburetor legs on the base. If legs are unavailable, install four 5/16 x 2 1/2 inch bolts and 8 nuts; install nuts on the bolts, above and below the carburetor base.

Use a separate container for the component parts of the various assemblies to facilitate cleaning, inspection, and assembly.

Refer to Part 23-01 for removal and installation and cleaning and in-

MAIN AND AUXILIARY (SUPPLEMENTAL) FUEL INLET VALVE

REMOVAL

1. Remove the air horn assembly from the main body of the carburetor.

2. Pull the float pivot pin and remove the float and lever assembly.

3. Remove the main fuel inlet needle valve, then use the proper size screwdriver or jet removal tool to remove the main and auxiliary valve seats and gaskets.

INSTALLATION

1. Install new gaskets on the valve seats. Then install the seats in the air horn.

2. Place the main fuel inlet needle valve in the valve seat.

3. Position the float and lever assembly between the hinge posts and over the fuel inlet valves, then install the float pivot pin. **The pin must be inserted from the pump plunger side for self-retention.**

4. Install the air horn on the main body.

5. Adjust the idle fuel mixture and engine idle speed.

ACCELERATING PUMP, INLET BALL CHECK, NEEDLE VALVE AND DISCHARGE CHECK VALVE DISC.

REMOVAL

1. Remove the air horn assembly from the main body of the carburetor.

tor.

2. Remove the accelerator rod retainer and rod from the accelerating pump lever, then remove the lever from the accelerating pump piston and remove the pump assembly from the air horn.

3. Remove the discharge check valve retainer with a small hook. Invert the air horn and allow the check valve disc to fall into palm of hand.

4. Remove the accelerating pump inlet ball check retainer with long-nose pliers, then use a magnet to lift the ball check from the pump well.

5. Pick the accelerating pump discharge needle from the discharge cavity.

INSTALLATION

1. Place the accelerating pump ball check in the pump inlet hole of the pump chamber. Install the ball check retaining ring (Fig. 9).

2. Insert the discharge check valve disc into the valve cavity, and install the valve retainer flush with the air horn surface. **The cross slot in the retainer is towards the valve.**

3. Place the accelerating pump discharge needle into the pump discharge cavity.

4. Insert the accelerating pump piston in the air horn.

5. Compress the pump plunger and insert accelerating pump arm into plunger stem.

Line up holes in lever and insert pivot pin through the specified hole in lever and the air horn casting. Install retainer on pin.

6. Install the air horn assembly on the main body.

spection.

The following is a step-by-step sequence of operations for completely overhauling the carburetor. However, certain components of the carburetor may be serviced without a complete disassembly of the entire unit.

AIR HORN

1. Remove the fuel inlet line from the fuel filter.

2. Remove the choke clean air pickup connecting tube from the air horn.

3. Remove the choke control rod

retainer from the automatic choke lever. Separate the rod from the lever.

4. Remove the accelerator pump rod retainer or spring from the pump lever. Separate the rod from the lever.

5. Remove the air cleaner anchor screw and remove the air horn to fuel bowl retaining screws.

6. Lift the air horn off the main body.

7. Pull the float pivot pin and remove the float assembly.

8. Using the proper size screwdriver or jet removal tool, remove the main and auxiliary (supplemental)

fuel inlet valve seats and gaskets.

9. Remove the secondary air valve lever retainer and the rod from the dampener piston assembly and air valve plate, then remove the air valve plate, then remove the air valve dampener piston rod and spring.

10. If it is necessary to remove the secondary air valve plates or shaft, remove the air valve plate(s) attaching screws. Remove the plates, then slide the shaft out of the air horn.

11. If it is necessary to remove the choke plate or choke shaft, remove the staking marks on the choke plate retaining screws and remove the screws. If the tips of the screws are flared excessively, file the flared portion to prevent damage to the threads in the shaft. Remove the choke plate, then slide the choke shaft and lever out of the air horn. The choke lever is attached to the shaft with a left hand thread screw.

12. Remove the hot idle compensator attaching screws, then remove the compensator (if so equipped).

13. Do not remove the power valve vacuum piston assembly unless it is to be replaced. It is staked in place in the air horn, and care must be used to avoid damage to the air horn casting when relieving the staked areas.

MAIN BODY

1. Turn the main body upside down and catch the accelerating pump discharge needle (Fig. 9).

2. With a 3/8 deep socket, remove the power valve from the floor of the main body fuel bowl (Fig. 9).

3. Remove the main metering jets (Fig. 9) from the fuel bowl with a jet tool.

4. Using long nose pliers, remove the accelerating pump inlet check ball retainer, then turn the main body over and catch the ball from the pump well.

THROTTLE BODY

Do not remove the idle mixture limiter caps or the mixture screws from the throttle body.

1. Remove the throttle body to main body screws from the bottom of the throttle body (Fig. 10) and separate the two castings.

2. Remove the choke housing cover screws, cover, gasket and thermostatic spring.

3. Remove the choke piston lever retaining screw, then remove the piston assembly.

4. Remove the retainers from the secondary throttle lever to primary

throttle connecting link, then remove the link.

5. If it is necessary to remove the throttle plates or shafts from the throttle body, remove the staking marks on the throttle plate attaching screws. Remove the screws and remove the plates.

6. Remove the nut from the secondary throttle shaft, then remove the lockout lever and slide the shaft and return spring out of the throttle body.

7. Remove the nut from the primary throttle shaft and remove the fast idle lever and adjusting screw (the 351 CID C engine has a two-piece fast idle lever). Slide the throttle shaft and primary throttle shaft and lever assembly out of the throttle plate.

8. Remove the primary throttle lever assembly retainer, then slide the lever and springs off the shaft.

9. If it is necessary to remove the fast idle cam or bushing, carefully press the bushing out of the choke housing and bushing column. The column may bend out of alignment or break without proper support to the column during bushing removal or installation.

ASSEMBLY

Make sure all holes in the new gaskets have been properly punched and that no foreign material has adhered to the gaskets. Gasket surfaces must be clean and flat and free of nicks or burrs.

The carburetor assembly is shown in Fig. 11.

THROTTLE BODY

1. If the throttle plates and shafts are removed, slide the primary throttle return spring (coiled clockwise) on the primary throttle shaft (flat milled) and slide the shaft into the primary shaft holes (mixture needle side of body).

2. Position the primary throttle plates (smaller diameter) in the primary bores with the ground flat edge of the plates facing up and towards the idle mixture needles. Install the plate retaining screws snug but not tight.

3. Rotate the throttle shaft to the closed position and tap the plate lightly with the end of a screw driver handle or similar tool, so that the plates are properly and fully seated in the throttle bores (when viewed with a light behind the plates, little or no light should be observed). Tighten the throttle plate screws.

4. Install the secondary throttle lock out lever.

5. Install the fast idle speed lever and adjusting screw.

6. If the fast idle cam and bushing were removed, insert the automatic choke shaft bushing through the choke housing. Position the fast idle cam between the choke housing and bushing column. Slide the bushing through the fast idle cam. Press the bushing in the choke housing and into the column. Clean the bushing with a 1/4-inch reamer.

7. Insert the automatic choke shaft and lever in the bushing.

8. Position the automatic choke piston in the choke cylinder and the lever on the automatic choke shaft. Install the retaining screw.

9. Insert the secondary throttle to primary throttle connecting rod into the throttle levers and install retainers.

MAIN BODY TO THROTTLE BODY

1. Position the main body on a working surface with the fuel bowl down.

2. Position the main body to throttle body gasket on the main body.

3. Position the throttle body on the main body and install the retaining screws.

4. Invert the main body and the

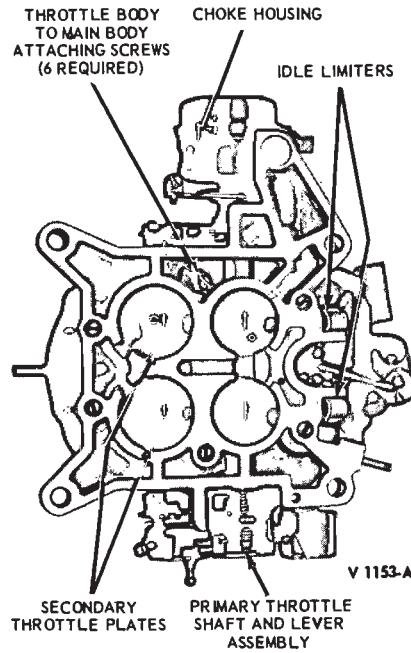


FIG. 10—Throttle Body—Bottom View

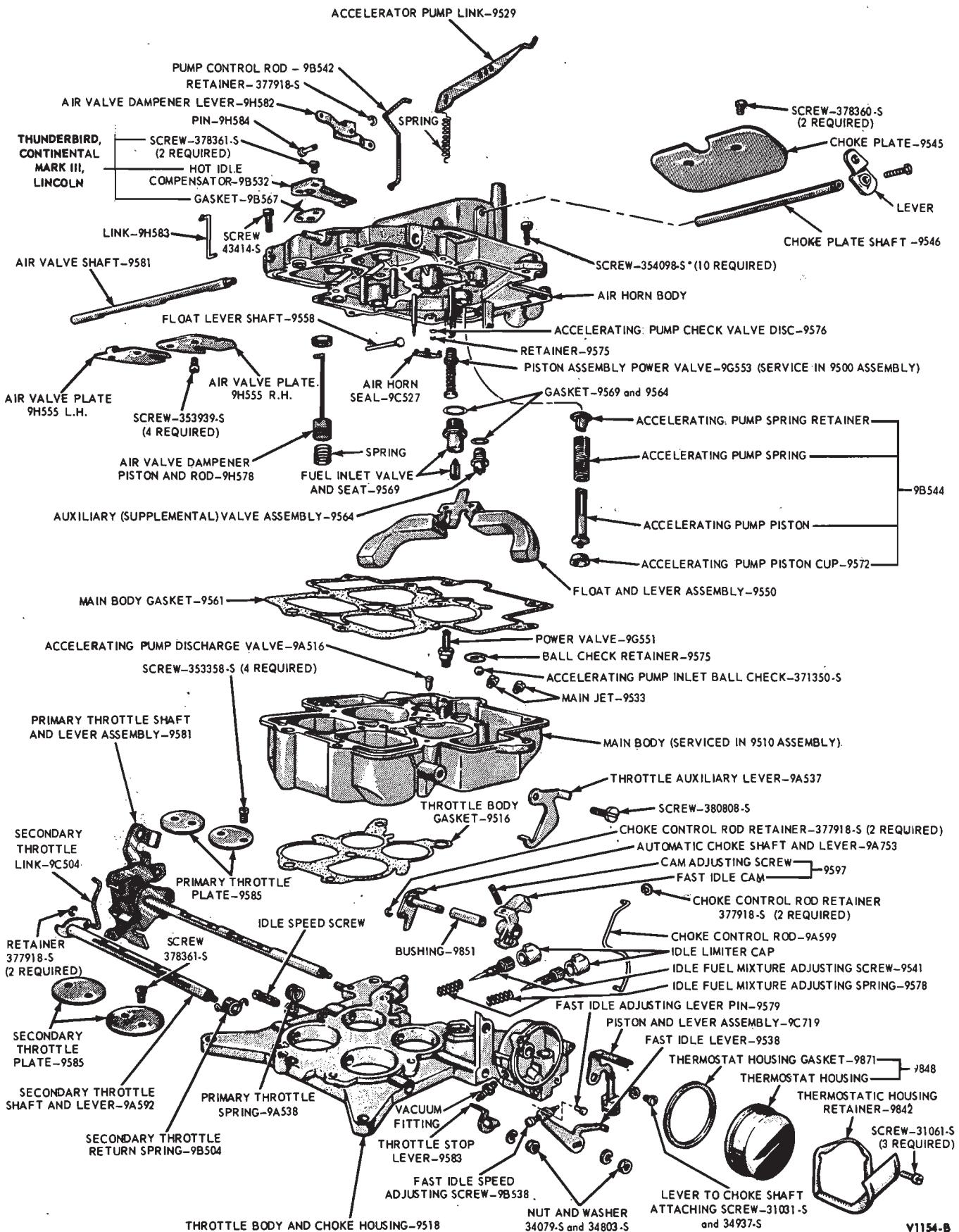


FIG. 11—Autolite Model 4300 4-V Carburetor Assembly

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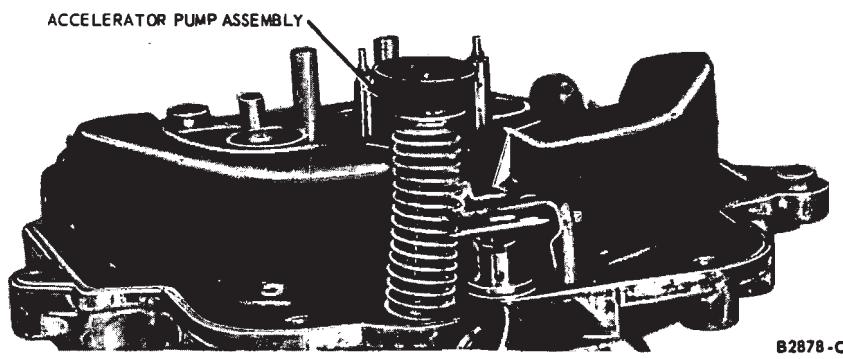


FIG. 12—Accelerator Pump in Position on Air Horn

throttle body so the fuel bowl is upward.

5. Install the power valve and main jets in the main body.

6. Install the choke to throttle lockout lever.

7. Place the accelerator pump ball check in the pump inlet hole of the pump chamber. Install the ball check retaining ring.

8. Place the accelerator pump discharge needle into the pump discharge cavity.

AIR HORN

1. Install the components removed from the air horn in the following order:

a. Power valve and gasket.

b. Auxiliary fuel inlet valve and gasket.

c. Hot idle compensator and gasket (if so equipped).

2. Assemble the accelerator pump plunger (Fig. 12) and insert into air horn.

3. Compress the pump plunger and insert accelerator pump arm into plunger stem.

Insert the split pivot pin through the specified hole in the lever and the air horn casting.

4. If the choke plate and shaft were removed, slide the choke shaft through the holes in the air horn. Install the choke shaft lever on the end of the shaft on the automatic choke side. The lever and shaft are tapered

and the attaching screw has a left hand thread.

Insert the choke plate into the slot in the choke shaft and install the plate retaining screws snug but not tight.

5. Close the choke plate and gently tap the plate with the end of a screw driver or a similar tool to properly position the plate in the air horn.

Tighten and stake the plate retaining screws.

6. If the air valve plates and shaft were removed, slide the shaft through the holes on the secondary side of the air horn and with the slotted end of the shaft in the air valve spring chamber.

Position the plain air valve plate in the air horn opening on the underside of the air horn and adjacent to the spring chamber.

Install the plate retaining screws snug but not tight.

Position the other air valve plate in the air horn opening with the eye retainer for the air valve control rod facing upward.

Install the plate retaining screws snug but not tight.

7. Close the air valve plates and lightly tap the plates with end of a screwdriver or similar tool to properly position the plates in the air horn.

Tighten and stake the plate retaining screws. Be sure the plates and shaft turn freely after assembly.

8. Insert fuel inlet needle into the fuel inlet seat.

9. Position float and lever assembly between hinge post and over fuel inlet valves.

Insert the float hinge pin through the post and float lever. The pin must be inserted from the pump plunger side for self-retention.

10. Insert key end of air valve dampener rod into keyed hole in the air valve lever.

Slide other end of rod into eye on the air valve plate.

Position the air valve dampener lever on the air horn and install pivot pin and retainer.

11. Insert the air valve dashpot piston rod through air horn and attach the rod end to the air valve lever.

12. Insert the accelerating pump bleed disc into the pump bleed cavity.

13. Set the float level (Refer to In Vehicle Adjustments and Repairs).

AIR HORN TO MAIN BODY

1. Position the main body to air horn gasket on the main body.

2. Carefully position the air horn assembly over the main body. Guide the accelerator pump plunger and the secondary throttle dashpot piston into their chambers as the air horn is gently lowered into position.

3. Install the other air horn retaining screws.

4. Insert the key end of accelerator pump control rod into the keyed hole in the primary throttle lever. Insert the other end of the rod into the pump lever and install retainer.

5. Insert the choke control rod end into the automatic choke lever. With long nose pliers, install the retaining clip.

6. Check the choke gasket cover clearance.

7. Install the choke gasket cover and retainer. Set the cover to the ninety (90) degree rich position.

8. Check the fast idle cam clearance.

9. Reset the choke cover to specifications.

10. Remove the carburetor legs or bolts from the throttle body.

3 SPECIFICATIONS

AUTOLITE MODEL 4300 4-V CARBURETOR

Vehicle	Engine CID	Transmission	Carburetor Number (9510)		Air-Fuel Ratio
Fairlane, Montego, Mustang and Cougar	351 C	Manual	DOOF-Z, AB		13.15
Fairlane, Montego, Mustang and Cougar	351 C	Automatic	DOOF-Y, AC		12.20
Fairlane, Montego, Mustang and Cougar	351 C	Automatic	DOOF-AA, AD Air Conditioned		12.20
Ford and Mercury Police	428	Automatic	DOAF-M, AD, AJ		14.30
Ford and Mercury Police	428	Automatic	DOAF-R, AE, AK Air Conditioned		14.30
Carburetor Number (9510)	DOOF-Z, AB	DOOF-Y, AC	DOOF-AA-AD	DOAF-M, AD, AJ	DOAF-R, AE, AK
CARBURETOR SIZE					
Throttle Bore Diameter-Primary			1.560		
-Secondary			1.690		
Venturi Diameter-Primary			1.250		
Air Flow (cfm)			600		
FUEL INLET SYSTEM					
Float Setting $\pm 1/32$.79-.85			1.00
Supplemental (Auxiliary) Valve Setting- $\pm 1/64$		1/16			1/32
FUEL BOWL VENTS					
Internal (2)			7/32		
IDLE SYSTEM					
Idle Jet		0.026			0.029
Idle Bleed-1st	0.046		0.055		0.059
-2nd				None	
-3rd				None	
Idle Channel Restriction				None	
Idle Discharge Port				0.082	
Idle Transfer Slot				0.028	
MAIN FUEL SYSTEM					
Main Metering Jet-Primary	61F		62F		61F
-Secondary		0.128			0.116
High Speed Bleed-Primary	0.031		0.035		0.031
-Secondary				0.024	
Anti Syphon Bleed-Primary				0.022	
Secondary				0.059	
Power Valve Jet				7.5-8.5	
Power Valve Timing-In. Hg.					
Air Valve Spring Color		Yellow			Blue
Spark Port				0.065	
PUMP SYSTEM					
Lever Position (Hole Number)		2			3
Capacity/10 Strokes-cc $\pm 2\text{cc}$		18.8			26.0
Pump Jet		0.028			0.035
Pump Stem Height ± 0.020		0.425			0.560
Pump Spring Color		Plain			Blue
CHOKE SYSTEM					
Bimetal and Cap Identification	4TY		4TX		4 TOC
Cap Setting		Index			2-Rich
Pulldown Setting	.180		.200		.160
Fast Idle Cam Setting	.160		.180		.120
Piston and Link Identification		No. 2			No. 3
Decchoke (Minimum)			0.300		
Choke Air Restriction			0.078		
Cam Identification			K		
DASHPOT					
Adjustment (If Equipped)	Solenoid-Equipped	0.080	Solenoid-Equipped	0.080	Solenoid-Equipped
IDLE SPEED					
Idle rpm ①	800/500 ②	600	600/500 ②	600	600/500 ②
Fast Idle rpm	1250	1400		1600	

① Headamps on Hi-Beam-Air Conditioning OFF (if equipped)

② Higher idle speed with throttle solenoid energized-Lower Idle Speed with throttle solenoid de-energized.

AUTOLITE MODEL 4300 4-V CARBURETOR

Vehicle	Engine Displacement	Transmission	Carburetor Number (9510)	Air-Fuel Ratio
Ford, Fairlane, Montego	429	Manual	DOAF-L, AB, AL	12.65
Ford, Mercury, Fairlane, Montego	429	Automatic	DOAF-AG, AM	12.80
Thunderbird	429	Automatic	DOSF-A, D, E	12.80
Lincoln, Mark III	460	Automatic	DOVF-A, B, C	12.05
SPECIFICATIONS				
Carburetor Number (9510)	DOAF-L, AB, AL	DOAF-AG, AM	DOSF-A, D, E	DOVF-A, B, C
CARBURETOR SIZE				
Throttle Bore Diameter-Primary			1.560	
-Secondary			1.690	
Venturi Diameter -Primary			1.250	
Air Flow (cfm)			600	
FUEL INLET SYSTEM				
Float Setting \pm 1/32			2 5/32	
Supplemental Valve Setting \pm 1/64			1/16	
IDLE SYSTEM				
Idle Jet	0.028		0.026	0.031
Idle Bleed - 1st			0.059	
- 2nd			None	
- 3rd			None	
Idle Channel Restriction			None	
Idle Discharge Port			0.082	
Idle Transfer Slot			0.028	
Idle Compensator Opens (Degrees)		None		148°
MAIN FUEL SYSTEM				
Main Metering Jet - Primary	64 F		63F	62
- Secondary		0.128		116
High Speed Bleed - Primary			0.031	
- Secondary			0.024	
Anti-Syphon Bleed - Primary			—	
- Secondary			0.022	
Power Valve Jet	0.052		0.055	0.049
Power Valve Timing-In. Hg.			7.5-8.5	
Air Valve Spring Color			Yellow	
Spark Port			0.065	
PUMP SYSTEM				
Lever Position (Hole Number)			No. 2	
Capacity/10 Strokes-cc \pm 2cc		21		
Pump Jet			0.028	18.8
Pump Stem Height- \pm 0.020	0.480		0.425	0.425
Pump Spring Color			Plain	
CHOKE SYSTEM				
Bimetal & Cap Identification			4 TY	
Cap Setting		Index		
Pulldown Setting	0.250		0.220	I-Rich
Fast Idle Cam Setting	0.220		0.170	0.230
Piston & Link Identification			No. 1	
Decchoke (Minimum)			0.300	
Choke Air Restriction	0.078		0.063	0.065
Cam Identification			K	
DASHPOT				
Adjustment (If Equipped)		0.070		0.100
IDLE SPEED				
Idle rpm ①	700		600	
Fast Idle rpm	1400		1300	1250

① Headlamps on Hi-Beam-Air Conditioning OFF (if equipped)

PART 23-06 Holley Model 4150-C 4-V Carburetor

The Holley Model 4150-C 4-V carburetor is used on the 302 BOSS, 428 Cobra Jet, 429 Super Cobra Jet and the 429 BOSS engines.

COMPONENT INDEX	Page	COMPONENT INDEX	Page
ACCELERATING PUMP Override Clearance	06-02	MAIN BODY Assembly Disassembly	06-08 06-06
CARBURETOR Assembly Description Disassembly	06-06 06-01 06-05	PERFORMANCE ADJUSTMENTS	06-01
CHOKE PLATE CLEARANCE AND FAST IDLE CAM ADJUSTMENT	06-02	POWER VALVE TEST	06-04
FUEL LEVEL FLOAT Adjustment—Dry Adjustment—Wet Fuel Level—Lower Fuel Level—Raise	06-03 06-04 06-04 06-04	PRIMARY FUEL BOWL AND METERING BLOCK Assembly Disassembly	06-08 06-05
		SECONDARY FUEL BOWL AND METERING BLOCK Assembly Disassembly	06-09 06-05
		SPECIFICATIONS	06-10

DESCRIPTION

The carburetor (Figs. 1 and 2) is mounted on the intake manifold. The carburetor is installed with the primary throttle and fuel bowl facing toward the front of the engine.

The fuel inlet system contains an external fuel distribution tube that routes fuel from the primary fuel inlet to the secondary fuel inlet.

The primary fuel bowl is vented during curb and off-idle engine operation through a vent valve, actuated by a lever on the throttle shaft.

The carburetor can be considered as a dual 2-venturi carburetor; one supplying a fuel-air mixture throughout the entire range of operation (primary stage), and the other functioning only when a greater quantity of fuel air mixture is required (secondary stage).

The primary stage of the carburetor contains a fuel bowl, fuel bowl vent, metering block and an accelerating pump assembly. The primary power system or power valve is located within the primary metering block. The primary bores each contain a primary and booster venturi, main fuel discharge nozzle, throttle plate and an idle fuel passage. The choke plate, mounted on the air horn above the primary bores, is controlled by an automatic choke mechanism.

The secondary stage of the carbure-

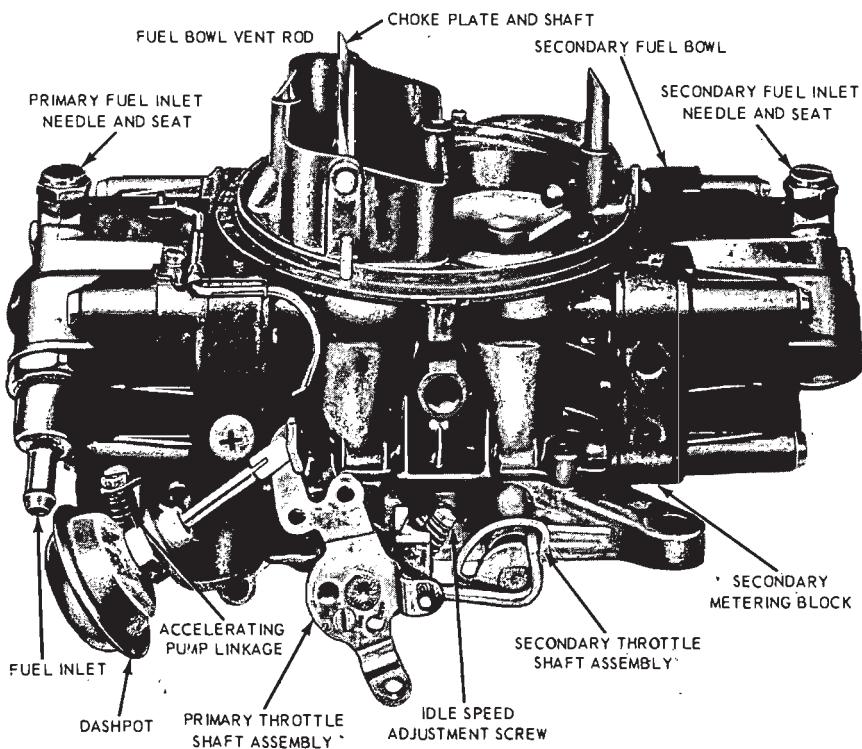
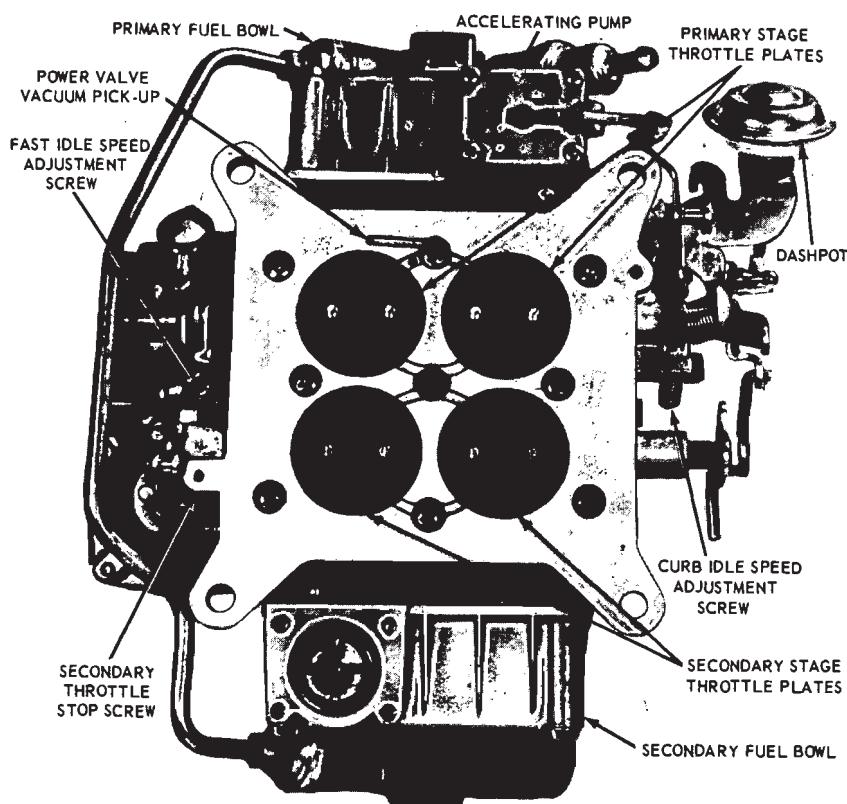


FIG. 1—Holley Model 4150-C 4-V Carburetor—Left Side

tor contains the secondary fuel bowl, metering block and the secondary throttle operating diaphragm assembly. The secondary bores each contain

a primary and booster venturi, idle fuel passages, a transfer system, a main secondary fuel discharge nozzle and a throttle plate.



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FIG. 2—Holley Model 4150-C 4-V Carburetor—Bottom View

1 IN-VEHICLE ADJUSTMENTS AND REPAIRS

PERFORMANCE ADJUSTMENTS

The following carburetor adjustments are described and illustrated in Part 23-01:

Idle Speed and Fuel Mixture

Fast Idle Speed

Anti-Stall Dashpot

Automatic Choke

To enable the vehicle to operate within the range of Government regulations to control engine emissions, the specifications for the adjustments were determined to help provide the most desirable engine performance characteristics. These specifications are contained in Part 23-01, and are arranged in chart form for ready reference.

The adjustment and repair procedures described in this part are performed less frequently, and are unique to the Holley Model 4150-C carburetor. The specifications for these adjustments and other technical

data are listed at the end of this Part.

ACCELERATING PUMP OVERRIDE CLEARANCE ADJUSTMENT

Using a feeler gauge, and with the primary throttle plates in the wide open position, there should be the specified clearance between the accelerating pump operating lever adjusting screw head and the pump arm when the pump arm is fully depressed manually (Fig. 3). Turn the adjusting screw in to increase the clearance and out to decrease the clearance. One-half turn of the adjusting screw is equal to 0.015 inch.

CHOKE PLATE CLEARANCE AND FAST IDLE CAM ADJUSTMENT

1. Remove the choke thermostatic housing cap.
2. Place the choke plate in the

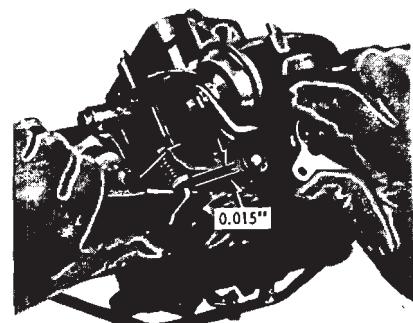


FIG. 3—Accelerating Pump Override Clearance

fully closed position by opening the throttle lever to about $\frac{1}{3}$ throttle, and press down on the front side of the choke plate. While holding the choke plate closed, release the throttle lever.

3. With the choke plate in the closed position, measure the distance between the flat of the fast idle cam

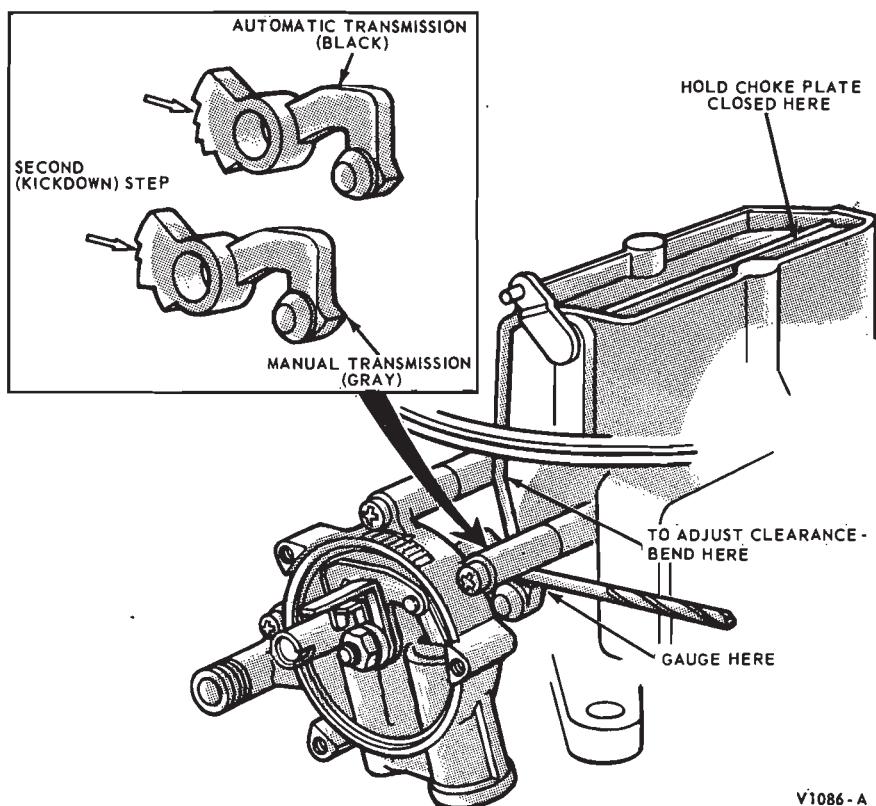


FIG. 4—Fast Idle Cam Adjustment

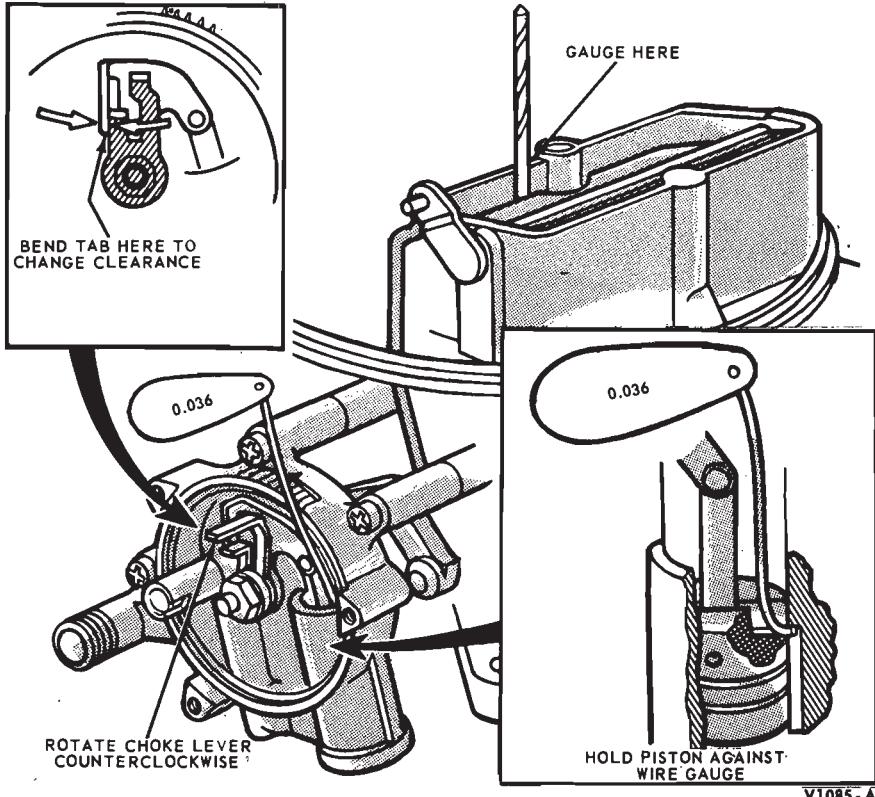


FIG. 5—Choke Plate Pulldown Adjustment

and the choke housing mounting post (Fig. 4). If the setting is not to specification, straighten or bend the choke rod to obtain the specified clearance.

4. Bend a 0.036 wire at a 90 degree angle approximately $1/16$ to $1/8$ inch from one end. Insert the bent end between the lower edge of the piston slot and the upper edge of the slot in the choke housing (Fig. 5). Open the throttle lever to about $1/3$ throttle and rotate the choke lever counterclockwise so the bent end of the wire is held in the housing slot by the piston slot with light pressure applied to the choke lever. Measure the distance between the air horn and the down side of the choke plate (Fig. 5). If the setting is not to specification, bend the adjusting tab on the choke lever to obtain the specified clearance.

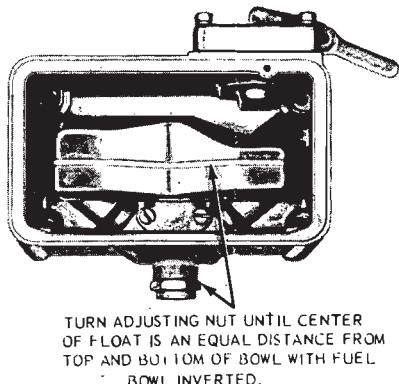
5. Install the choke thermostatic housing. Make sure the bimetal loop is installed around the choke lever. Set the cap notch to specifications.

6. Connect a tachometer to the engine. With the engine operating and temperature stabilized, set the fast idle screw on the kickdown or second high step of the fast idle cam (Fig. 4).

FUEL LEVEL FLOAT ADJUSTMENT—DRY

The dry float adjustment is a preliminary fuel level adjustment only. The final adjustment (Fuel Level Float Adjustment—Wet) must be performed after the carburetor is installed on the engine.

As a preliminary adjustment, adjust the float so that the center of the float is an equal distance from the top and bottom of the fuel bowl with the fuel bowl inverted (Fig. 6).



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FIG. 6—Float Adjustment (Dry)

FUEL LEVEL FLOAT ADJUSTMENT—WET

Position the vehicle on a level floor. Be sure the fuel pump pressure is within specifications. Operate the engine until normal operating temperature has been reached.

1. Check the fuel level in each fuel bowl separately. Place a suitable container below the fuel level sight plug to collect any spillover of fuel. Remove the fuel level sight plug and gasket and check the fuel level (Fig. 7). The fuel level within the bowl should be at the lower edge of the sight plug opening $\frac{1}{16}$ inch.

2. If the fuel level is satisfactory, install the sight plug. Do not install the air cleaner at this time.

3. If the fuel level is too high, stop the engine, install the sight plug, drain the fuel bowl and refill it and check it again before altering the float setting. This will eliminate the possibility of foreign material causing a temporary flooding condition. To drain the fuel bowl, loosen one lower retaining bolt from the fuel bowl and drain the fuel into a suitable container. Install the bolt and the fuel lever sight plug, and start the engine to fill the fuel bowl. After the fuel level has stabilized, stop the engine and check the fuel level.

If the fuel level is too high, it should first be lowered below specifications and then raised until it is just at the lower edge of the sight plug opening. If the fuel level is too low, it is only necessary to raise it to the specified level. Follow the procedure under To Lower Fuel Level or To Raise Fuel Level, whichever is applicable.

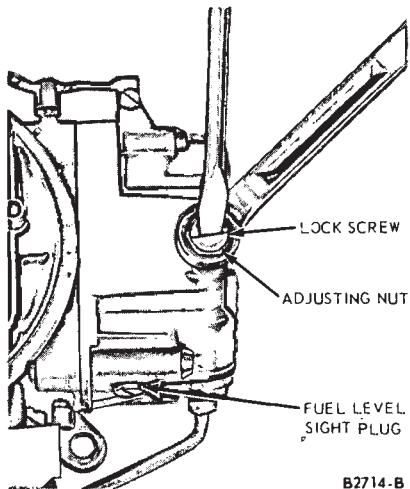


FIG. 7 — Fuel Level Float Adjustment (Wet)

To Lower Fuel Level

1. With the engine stopped, loosen the lock screw on top of the fuel bowl just enough to allow rotation of the adjusting nut underneath (Fig. 7). Do not loosen the lock screw or attempt to adjust the fuel level with the sight plug removed and the engine running because the pressure in the line will spray fuel out and present a fire hazard.

2. Turn the adjusting nut approximately $\frac{1}{2}$ turn in to lower the fuel level below specifications ($\frac{1}{6}$ turn of the adjusting nut, depending on direction of rotation, will raise or lower the float assembly at the fuel level sight plug opening $\frac{3}{64}$ inch).

3. Tighten the lock screw and reinstall the fuel level sight plug. Start the engine. After the fuel level has stabilized, stop the engine and check the fuel level at the sight plug opening. The fuel level should be below specified limits. If it is not, repeat the previous steps, turning the adjusting nut an additional amount sufficient to lower the fuel below the specified level.

4. Loosen the lock screw and turn the adjusting nut out in increments of $\frac{1}{6}$ turn or less until the correct fuel level is achieved. After each adjustment tighten the lock screw, install the fuel level sight plug and then start the engine and stabilize the fuel level. Check the fuel level at the sight plug opening. Install the sight plug and gasket.

5. Check the idle fuel mixture and idle speed adjustments. Adjust the carburetor as required.

To Raise Fuel Level

Perform steps 1, 4 and 5 under the procedure To Lower Fuel Level.

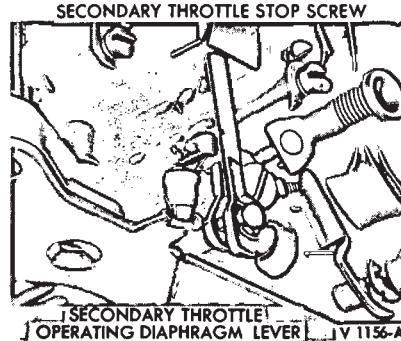


FIG. 8—Secondary Throttle Plate Adjustment

SECONDARY THROTTLE PLATE

1. Hold the secondary throttle plates closed.

2. Turn the secondary throttle shaft lever adjusting screw (stop screw) out (counterclockwise) until the secondary throttle plates stick in the throttle bores (Fig. 8).

3. Turn the screw in (clockwise) until the screw JUST contacts the secondary lever.

4. Turn the screw (clockwise) the specified distance.

POWER VALVE TEST

A power valve must not be replaced unless it is leaking sufficiently to cause an unadjustable rough engine idle condition. Fuel accumulation in the power valve cover does not necessarily indicate an improperly working power valve. Fuel vapors will be drawn into the vacuum side of the power valve and condense during periods of deceleration. Leakage in the power valve area can be caused by an improperly tightened cover or damaged gaskets. Any gasket sealing deficiencies must be corrected before the power valve is replaced.

If power valve leakage is suspected, the following test procedure must be performed.

1. Remove the secondary fuel bowl and secondary metering block from the carburetor.

2. Install the fuel bowl, metering block, and gaskets on the adapter plate (Fig. 9). Be sure the fuel bowl screws are properly tightened.

3. Remove the glass bowl from the fixture and fill it half-full of water.

4. Install a bowl on the fixture.

5. Connect a line from a vacuum pump to the fitting on top of the fixture.

6. Connect a line from the adapter

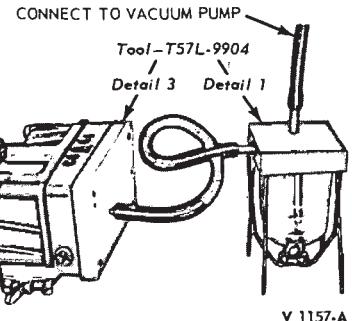


FIG. 9—Power Valve Test

plate to the fitting on the side of the fixture.

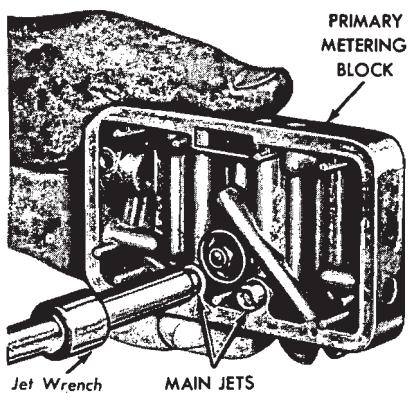
7. Look for bubble formations in the water in the bowl. A continuous stream of bubbles indicates leakage through the power valve diaphragm or gasket, or the cover or gasket.

If leakage is encountered, the

power valve, power valve gasket, cover, and cover gasket should be replaced one at a time with a new part and the test repeated until the source of leakage has been found. If the source of leakage can not be found, the gasket seats are damaged and the appropriate parts should be replaced.

A few bubbles may be noticed immediately upon attaching the vacuum line. The bubbling should stop within approximately 15 seconds or after the air has been removed from the system. If no bubbles are seen, the power valve, gaskets and cover are sealing properly.

2 MAJOR REPAIR OPERATIONS



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FIG. 10—Main Jet Removal or Installation

DISASSEMBLY

To facilitate working on the carburetor, and to prevent damage to the throttle plates, install carburetor legs on the base. If the legs are unavailable, install four bolts, about 2 1/4-inches long of the correct diameter, and eight nuts on the carburetor base.

Use a separate container for the component parts of the various assemblies, to facilitate cleaning, inspection, and assembly.

The following is a step-by-step sequence of operations for completely overhauling the carburetor. However, certain components of the carburetor may be serviced without a complete disassembly of the entire unit. For a complete carburetor overhaul, follow all the steps. To partially overhaul the carburetor or to install a new gasket kit, follow only the applicable steps.

PRIMARY FUEL BOWL AND METERING BLOCK

1. Disconnect the inter-connecting fuel line at the primary and secondary

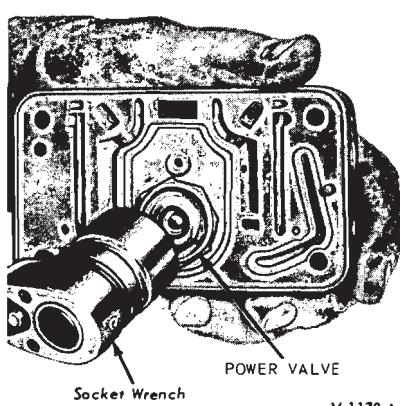


FIG. 11—Power Valve Removal or Installation

fuel bowls. Remove the retaining screws and gaskets, fuel bowl and gasket and the metering block and gasket. Discard the gaskets. Remove the baffle.

2. Remove the idle fuel mixture limiters, then remove idle adjusting screws from the metering block.

3. Using a jet wrench, remove the main jets (Fig. 10).

4. Using a socket wrench, remove the power valve and gasket (Fig. 11).

5. Remove the fuel level adjustment lock screw and gasket. Turn the adjustment nut counterclockwise and remove the lock nut and gasket. Remove the fuel inlet needle and seat assembly. Do not disassemble the fuel inlet needle and seat. They are matched assemblies and are replaced as an assembly.

6. Remove the screws securing the float assembly to the fuel bowl (Fig. 12). Remove the float assembly.

7. Slide the shaft out of the float assembly and remove the spring (Fig. 13).

8. Remove the fuel level sight plug and gasket. Remove the fuel bowl in-

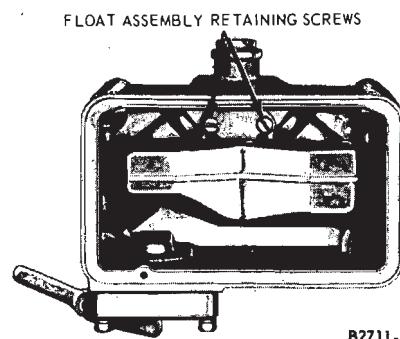


FIG. 12—Float Assembly Removal or Installation

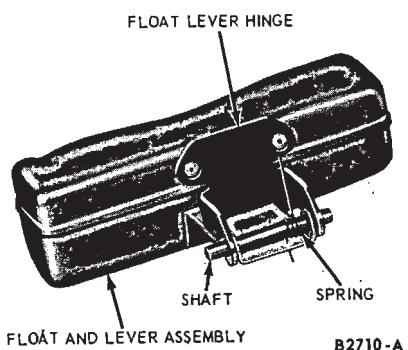


FIG. 13—Float Assembly

terconnecting fuel line fitting and gasket. Discard the gasket.

9. Remove the fuel inlet fitting, gasket, and filter screen.

10. Invert the fuel bowl and remove the accelerating pump cover, diaphragm, and spring. The accelerating pump inlet ball check is not removable.

11. Remove the vent rod bracket retaining screw and lockwasher. Remove the plug, spring and bracket from the vent rod.

SECONDARY FUEL BOWL AND METERING BLOCK

1. Remove the fuel bowl. Remove

the metering block and the front and the rear gasket.

Disassemble the fuel bowl and the metering block by following Steps 3, 5, 6, 7 and 8 under Primary Fuel Bowl and Metering Block.

MAIN BODY

- Remove the air cleaner anchor stud, and remove the secondary diaphragm operating rod to link retainer.

- Invert the carburetor and remove the throttle body retaining screws and lock washers. Lift the throttle body and discard the throttle body gasket.

Automatic Choke

- Remove the choke rod retainer from the automatic choke housing shaft and lever assembly. Remove the thermostatic spring housing and gasket; then remove the choke housing and gaskets from the main body.

- Remove the choke housing shaft nut, lock washer, and spacer, then, remove the shaft and fast idle cam. Remove the choke piston and lever assembly.

- Remove the choke rod and seal from the main body. If necessary, remove the choke plate from the choke shaft; then slide the shaft and lever out of the air horn. The retaining screws are staked to the choke shaft. If the tips of the screws are flared excessively, file off the flared portion to avoid damage to the threads in the choke shaft. Be careful not to damage the choke shaft or venturi while filing the screws.

Secondary Diaphragm Housing

- Remove the secondary diaphragm housing assembly and gasket from the main body. The housing as-

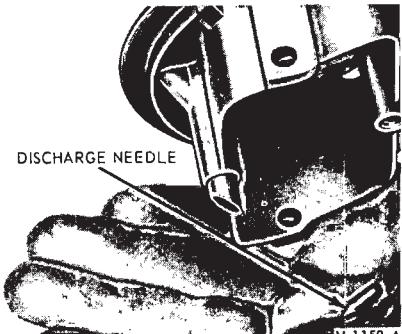


FIG. 14—Accelerating Pump Discharge Needle Removal

sembly must be removed before the cover can be removed.

- Remove the diaphragm housing cover; then, remove the spring and diaphragm, and the vacuum ball check from the housing.

Accelerating Pump Discharge Assembly

- Remove the accelerating pump discharge nozzle screw. Lift the pump discharge nozzle and gaskets out of the main body. Invert the main body and let the accelerating pump discharge needle fall into the hand (Fig. 14).

THROTTLE BODY

- Remove the accelerating pump operating lever retainer.

- Remove the secondary throttle connecting rod retainers and the connecting rod retainers and the connecting rod. Remove the secondary diaphragm lever and the fast idle cam lever retaining screws and washers, and remove the levers.

- If necessary, remove the throttle stop screw.

- If it is necessary to remove the throttle plates, lightly scribe the throttle plates along the throttle shaft, and mark each plate and its corresponding bore with a number or letter for proper installation (Fig. 15). Remove the throttle plates. The retaining screws are staked to the throttle shaft. If the tips of the screws are flared excessively, file off the flared portion to avoid damage to the threads in the throttle shaft. Be careful not to damage the throttle shaft or venturi while filing the screws.

Remove the primary throttle shaft

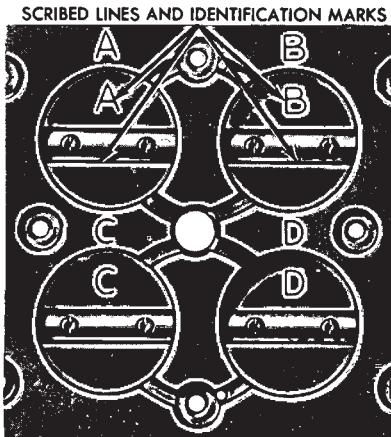


FIG. 15—Throttle Plate Removal

return spring from the notch on the throttle shaft lever (Fig. 15). Slide the primary throttle lever and shaft assembly out of the throttle body. If necessary remove the accelerating pump cam.

Slide the secondary throttle shaft out the main body and remove the bushings from the shaft.

ASSEMBLY

Make sure all holes in the new gaskets have been properly punched and that no foreign material has adhered to the gaskets. Make sure the accelerating pump and secondary operating diaphragms are not cut or torn.

The carburetor assembly is shown in Fig. 17.

THROTTLE BODY

- If the secondary throttle plates were removed, position the bushings on the secondary throttle shaft. Slide the shaft into the throttle body. Refer to the lines scribed on the throttle plates; then, install the plates in the proper location with the screws snug, but not tight.

- Close the throttle plates and hold the throttle body up to the light. Little or no light should show between the throttle plates and the throttle bores. If the throttle plates are properly installed and there is no binding when the throttle shaft is rotated, tighten the throttle plate screws. Stake the screws. When staking the screws, support the shaft and plates on a block of wood or a soft metal bar to prevent bending of the shaft.

Refer to In-Vehicle Adjustments

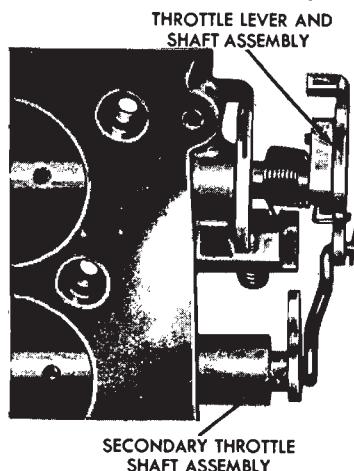


FIG. 16—Throttle Lever and Shaft Assembly Installation



FIG. 17—Holley Model 4150-C Carburetor Assembly

and Repairs for the correct adjustment of the secondary throttle plates.

2. Install the secondary diaphragm lever, lock washer, and screw.

3. Install the accelerating pump cam on the primary throttle shaft if it was previously removed. Place the throttle connecting rod end with the smallest bend into position in the primary throttle lever. Slide the throttle shaft into the throttle body, guiding the throttle connecting rod so that the other end fits into the secondary throttle lever.

4. Position the primary throttle return spring so that the small tang fits into the slot in the throttle lever and the long tang rests against the slot in the throttle body stop.

5. Install a washer on the secondary throttle shaft end of the connecting rod; then secure both ends of the connecting rod with hairpin type retainers.

6. Install the primary throttle plates, using the same procedures as for the secondary throttle plates.

7. Install the fast idle cam lever, lock washer, and screw.

8. Install the throttle stop screw.

9. Install the accelerating pump operating lever and retainer.

MAIN BODY

Accelerating Pump Discharge Assembly

1. Drop the accelerator pump discharge needle into its well (Fig. 18). Lightly seat the needle with a brass drift and a hammer.

2. Position the accelerating pump nozzle and gaskets in the main body and install the retaining screw.

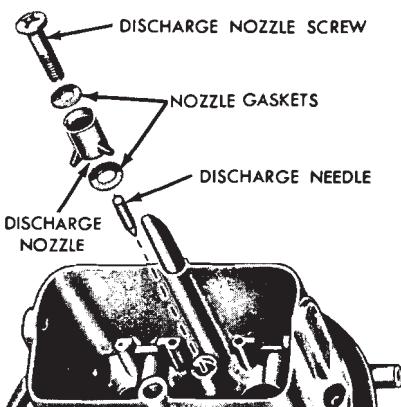


FIG. 18—Accelerating Pump Discharge Assembly

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Secondary Diaphragm Housing

1. The secondary diaphragm housing must always be installed before the choke housing. Drop the vacuum ball check in the vacuum port of the secondary diaphragm housing; then, position the secondary diaphragm in the housing and place the spring in the cover.

2. Install the cover with the screws finger-tight. Pull the diaphragm rod downward as far as it will go and tighten the cover screws. The diaphragm housing must always be removed from the main body to install the cover.

3. Place the gasket on the secondary vacuum passage opening on the main body. Place the diaphragm housing in position on the main body and install the lock washers and retaining screws.

Automatic Choke

1. Position the choke plate shaft in the air horn and install the choke plate in the shaft. Install the rod seal on the choke rod. Slide the U-shaped end of the choke plate rod through the opening in the main body and insert the rod end through the inner side of the bore in the choke lever. The rod end must face outward. Push the rod seal into the retaining grooves on the underside of the air cleaner mounting flange.

2. Position the choke thermostat lever link and piston assembly in the choke housing. Position the fast idle cam assembly on the choke housing and install the choke housing shaft and lever assembly. Position the lever and piston assembly on the choke housing shaft and lever assembly. Install the spacer, lock washer and nut.

3. Lay the main body assembly on its side and position the choke housing gaskets on the main body. Insert the choke rod in the choke housing shaft lever as the choke housing is placed in position on the main body. Be sure the projection on the choke rod is placed under the fast idle cam so that the cam will be lifted when the choke plate is closed. Install the choke housing lock washers and screws. Using needle-nose pliers, install the choke rod cotter pin.

4. Place the thermostatic spring housing gasket in position on the choke housing, engaging the thermostatic spring on the spring lever; then, install the housing, clamp and screws.

Adjust the thermostatic spring housing by aligning the index mark on the cover with the mid-position mark on the choke housing.

Main Body To Throttle Body

1. Invert the main body and position the throttle body gasket on the main body. Place the throttle body on the main body and slide the secondary diaphragm rod onto the secondary operating lever as the throttle body is placed into position. Install the throttle body to main body retaining screws and lock washers.

2. Secure the secondary diaphragm rod with the retainer.

3. Install the air cleaner anchor stud.

PRIMARY FUEL BOWL AND METERING BLOCK

1. Place the accelerating pump diaphragm spring and diaphragm in the accelerating pump chamber. The diaphragm must be positioned so that the large end of the lever disc will be against the operating lever. Install the cover with the screws finger-tight. Make sure the diaphragm is centered, then, compress the diaphragm with the pump operating lever and tighten the cover screws.

After the carburetor is assembled, refer to In-Vehicle Adjustments and Repairs, for the correct adjustment of the accelerating pump.

2. Install the gasket and fuel inlet and filter fitting.

3. Install the fuel level sight plug and gasket. Install the fuel bowl interconnecting fuel line fitting and gasket.

4. Position the float hinge bracket on the float arm and install the float shaft and spring (Fig. 13). Secure the float assembly to the fuel bowl with the retaining screws (Fig. 12).

5. Apply petroleum jelly to a new O-ring seal and slide it on the fuel inlet needle and seat assembly.

6. Position the fuel inlet needle and seat assembly in the fuel bowl through the top of the bowl. Position the adjusting nut gasket and nut on the fuel inlet needle and seat assembly. Align the flat on the I.D. of the nut with the flat on the O.D. of the fuel inlet needle and seat assembly. Install the fuel level adjustment lock screw and gasket.

7. As a preliminary float adjustment, refer to In-Vehicle Adjustments and Repairs and perform the Float

Adjustment—Dry.

8. Using a socket wrench, install the power valve and gasket in the metering block (Fig. 11). Be sure to install the specified power valve. Refer to the specifications for the correct identification number. The number is stamped on a flat on the base of the valve.

9. Using a jet wrench, install the specified jets in the metering block (Fig. 10).

10. Install the idle adjusting screws. Turn the screws in until they just touch the seat, then, back them off 1 1/2 turns for an initial idle fuel mixture adjustment. **Do not install**

the idle fuel mixture limiter caps until the carburetor is installed on the engine and the idle air-fuel ratio is set to specifications. (Refer to Part 23-01).

11. Position the metering block gasket on the dowels located on the back of the metering block.

Position the metering block and gasket on the main body. Position the baffle plate (primary side only) and the gasket on the metering block. Place the retaining screws and new compression gaskets in the fuel bowl. Position the bowl in place on the metering block while making certain the fuel bowl vent rod is properly posi-

tioned against the primary throttle lever. Make sure the accelerating pump lever adjusting screw rests on the lever on the accelerating pump cover.

Tighten the retaining screws.

**SECONDARY FUEL BOWL
AND METERING BODY OR
METERING BLOCK**

1. Assemble the secondary fuel bowl, perform a dry float adjustment, and assemble the metering block by following procedure steps 3, 5, 6, 7, 8, 10 and 12 under Primary Fuel Bowl and Metering Block.

3 SPECIFICATIONS

HOLLEY MODEL 4150-C 4-V CARBURETOR

Vehicle	Engine	Transmission	Carburetor Number (9510)			Air-Fuel Ratio		
Mustang, Cougar	302 H.O.	Manual	DOZF-Z			13.50		
Mustang, Cougar	428 CJ	Manual	DOZF-AA			13.80		
Mustang, Cougar	428 CJ	Automatic	DOZF-AB			14.30		
Mustang, Cougar	428 CJ	Manual	DOZF-AC Air Conditioned			13.80		
Mustang, Cougar	428 CJ	Automatic	DOZF-AD Air Conditioned			14.30		
Montego, Fairlane	429 SCJ	Manual	DOOF-N			①		
Montego, Fairlane	429 SCJ	Automatic	DOOF-R			①		
Fairlane, Montego, Mustang, Cougar	429 BOSS	Manual	DOOF-S			14.20		
Carburetor Number (9510)	DOZF-Z	DOZF-AA	DOZF-AB	DOZF-AC	DOZF-AD	DOOF-N	DOOF-R	DOOF-S
CARBURETOR SIZE								
Throttle Bore Dia.-Pri. -Sec.	①			1.690				
Venturi Diameter -Pri. -Sec.	①			1.690				
Air Flow (cfm)	①			1.380				
				1.340				
				735				
						1.440		134.0
						780		735
FUEL SYSTEM								
Fuel Level								
Dry Float Setting								
Main Jet-Pri. -Sec.	①			66		71	70	64
	①			79				
Power Valve Timing (In. Hg.)	①				6-8			
Sec. Throttle Opening					1/2 Turn			
						83		82
								7.9
CHOKE SYSTEM			Manual			Automatic		Manual
Choke Cap Identification						GTI	GTA	
Choke Cap Setting						2-Rich		
Fast Idle Cam Clearance						.0300		
Dechoke (Minimum)								
PUMP SYSTEM								
Capacity/10 Strokes (cc)	①			17-23				
Pump Cam Position	①					#2		
Cam Color Ident.	①					White		
Override Spring Adj.-Min.	①					.015		
DASHPOT								
Adjustment (If Equipped)	①	.140	.200			Solenoid Equipped		
IDLE SPEED								
Idle rpm ②	①	725	675	725/500 ③	675/500 ④	650/500 ⑤	700/500 ⑥	
Fast Idle Speed ②	①	1900	2100	1900	2100	2400	2200	

① Information not available from General Parts Division. A Technical Service Bulletin will be issued when the information is obtained.

② Headlamps on Hi-Beam - Air Conditioning OFF (if equipped)

③ Highest Step of Cam

④ Higher idle speed with throttle solenoid energized - lower idle speed with throttle solenoid de-energized.

PART 23-07 Rochester Quadrajet Model 4MV Carburetor

The Rochester Quadrajet Model 4MV Carburetor is used exclusively on the 429 Cobra Jet engine.

COMPONENT INDEX	Page	COMPONENT INDEX	Page
AIR HORN		ROD—PUMP—ADJUSTMENT	07-06
Assembly	07-07	ROD—SECONDARY METERING—	
Disassembly	07-07	ADJUSTMENT	07-05
Installation	07-07	SPRING—AIR VALVE CLOSING—	
Removal	07-07	ADJUSTMENT	07-05
DASHPOT—AIR VALVE—ADJUSTMENT..	07-03	THROTTLE BODY	
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ROCHESTER QUADRAJET MODEL		ADJUSTMENT	
4MV DESCRIPTION.....	07-01	Three Point Pickup	07-04
ROD—CHOKE—ADJUSTMENT	07-02	UNLOADER (DECHOKE) ADJUSTMENT ..	07-03
ROD—CHOKE COIL—ADJUSTMENT	07-05	VACUUM BREAK ADJUSTMENT	07-03
		SPECIFICATION	07-11

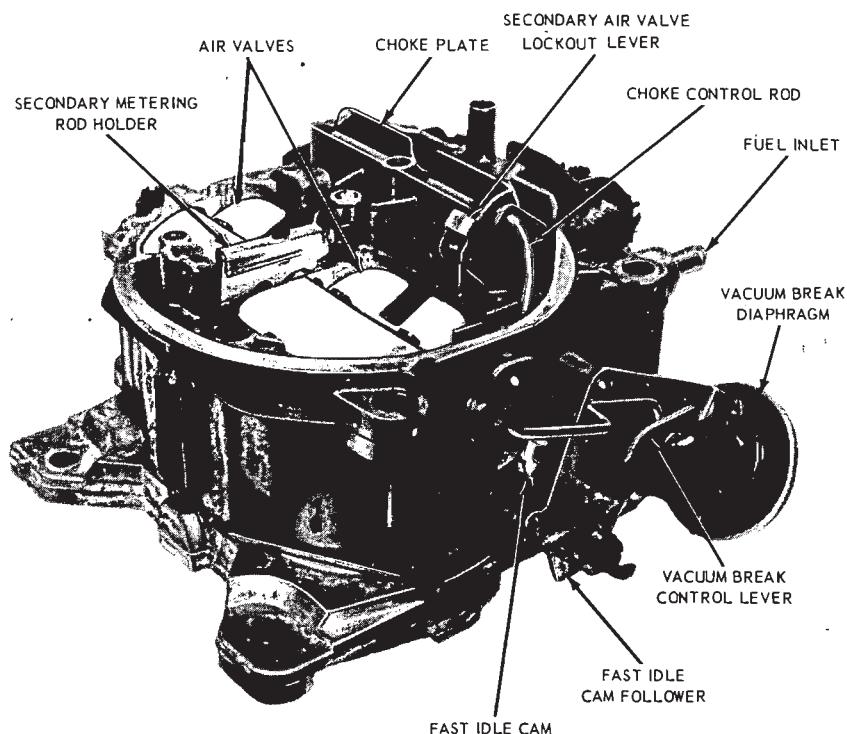
DESCRIPTION

The Quadrajet Model 4MV is a 4-venturi two-stage carburetor (Figs. 1 and 2) of downdraft design with an automatic choke design for use with a manifold-mounted thermostatic choke coil.

The Quadrajet carburetor has two stages of operation. The primary (fuel inlet) side has 1 3/8-inch bores with a triple venturi set-up equipped with plain tube nozzles. Operation is similar to most carburetors using the venturi principle. The triple venturi stack up, plus the small primary bores, result in more stable and finer fuel control during idle and part-throttle operation. During off-idle and part-throttle operation, fuel metering is accomplished with tapered metering rods operating in specially designed jets, positioned by a manifold vacuum responsive piston.

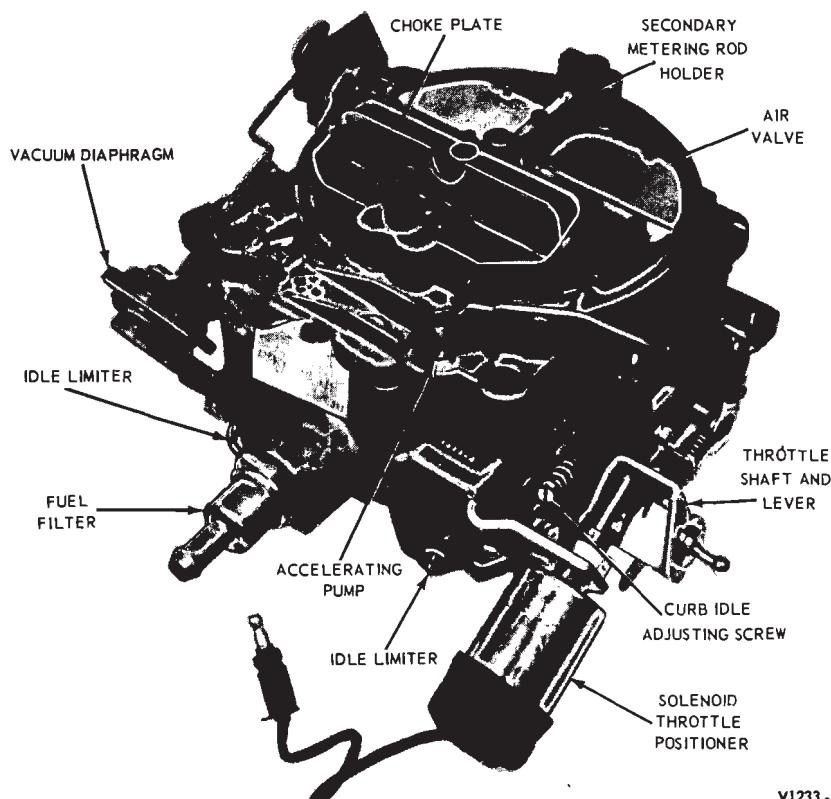
The secondary side of the Quadrajet has two 2 1/4-inch bores. These, added to the primary, give enough air capacity to meet engine requirements. The air valve is used in the secondary side for metering control and supplements the primary bores to meet air and fuel requirements of the engine.

The secondary air valve mechanically operates tapered metering rods which move in orifice plates, thereby,



V1237-A

FIG. 1—Rochester Quadrajet Model 4MV Carburetor—Right Rear Quarter



V1233-A

FIG. 2—Rochester Quadrajet Model 4MV Carburetor—Left Front Quarter

controlling fuel flow from the secondary nozzles in direct proportion to air flowing through the secondary bores.

The float bowl is centrally located to help avoid fuel spillage causing engine turn cut out and delayed fuel flow to the carburetor bores. The float bowl reservoir is smaller in design than most earlier 4-venturi carburetors to help reduce fuel evaporation loss during engine shut down. The float system has a single pontoon float.

The throttle body is aluminum to reduce overall weight and help improve heat conduction to prevent icing.

The primary side of the carburetor has six operating systems. They are float, idle, main metering, power, pump and choke. The secondary side has one main metering system. All metering systems receive fuel from the one float chamber.

1 IN-VEHICLE ADJUSTMENTS AND REPAIRS

PERFORMANCE ADJUSTMENTS

The following carburetor adjustments are described and illustrated in Part 23-01:

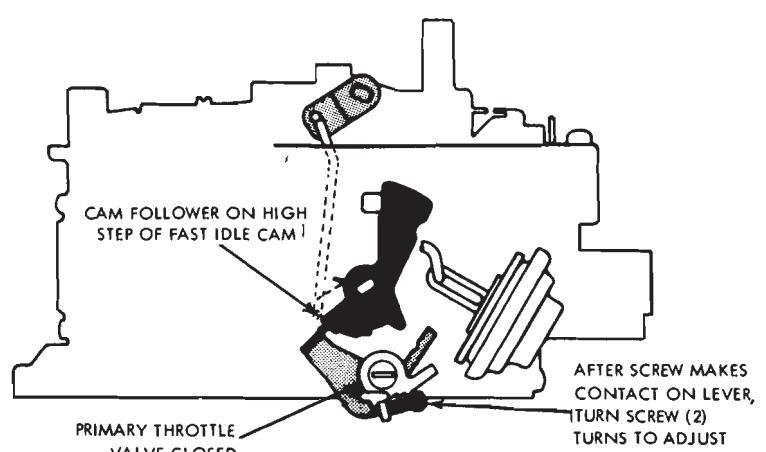
Idle Speed and Fuel Mixture

Fast Idle Speed

Anti-Stall Dashpot

To enable the vehicle to operate within the range of Government regulations to control engine emissions, the specifications for the adjustments were determined to help provide the most desirable engine performance characteristics. These specifications are contained in Part 23-01, and are arranged in chart form for ready reference.

The adjustment and repair procedures described in this part are performed less frequently, and are unique to the Rochester Model 4MV carburetor. The specifications for these adjustments and other technical data are listed at the end of this Part.



V1206-A

FIG. 3—Fast Idle Adjustment

CHOKE ROD ADJUSTMENT

Place the fast idle cam follower on the highest step of the fast idle cam (Fig. 3). Back out the fast idle screw until the primary throttle plates are completely closed and the cam follower is away from highest step of the cam. Then turn the fast idle screw inward until the cam follower just con-

until the primary throttle plates are completely closed and the cam follower is away from highest step of the cam. Then turn the fast idle screw inward until the cam follower just con-

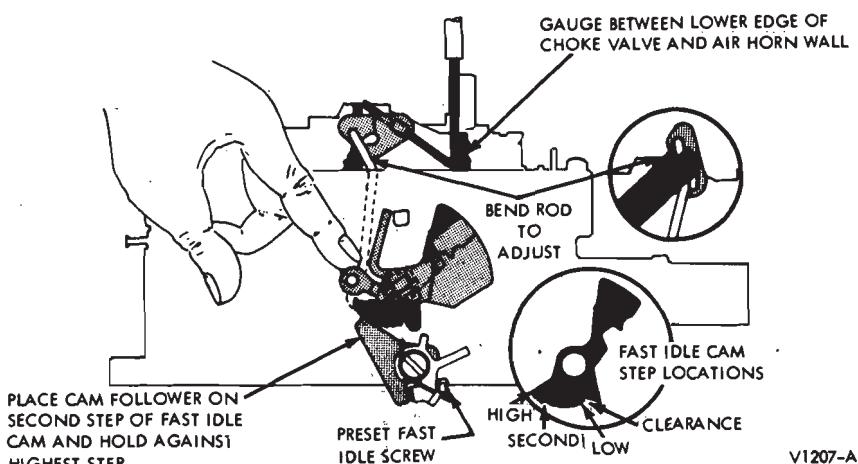


FIG. 4—Choke Rod Adjustment

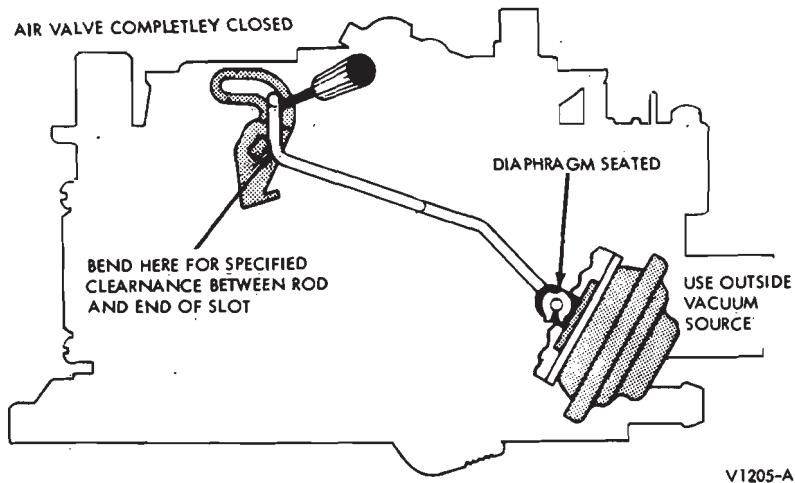


FIG. 5—Air Valve Dashpot Adjustment

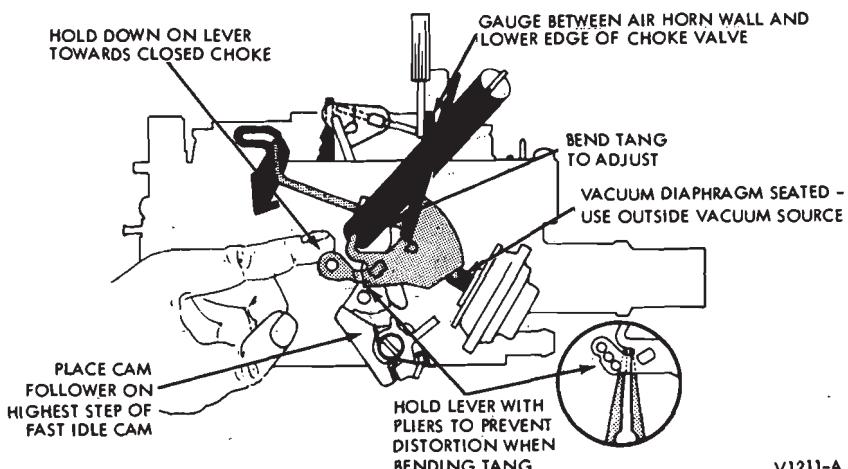


FIG. 6—Vacuum Break Adjustment

tacts the highest step of the cam; from this point, turn the screw two more complete turns. This presets the fast idle screw so that the following choke settings can be made accurately.

With the fast idle adjustment made, place the fast idle cam follower on the second step of the fast idle cam and against the rise to the highest step (Fig. 4). Rotate the choke plate towards the closed choke position by pushing counterclockwise on the vacuum break lever.

Measure the dimension with a plug gauge between the lower edge of the choke plate, at the choke lever end and inside the air horn wall.

To adjust, bend the choke rod at the point shown in Fig. 4.

Adjust the fast idle speed to specifications.

AIR VALVE DASHPOT ADJUSTMENT

1. Seat the vacuum break diaphragm, using an outside vacuum source (Fig. 5).

2. With the air valve completely closed and the diaphragm seated, measure the clearance between the air valve dash pot rod and the air valve lever.

3. The dimension should be as specified. If not, bend the rod at the air valve end to adjust.

VACUUM BREAK ADJUSTMENT

1. Seat the vacuum break diaphragm using an outside vacuum source (Fig. 6).

2. Place the cam follower on the highest step of the fast idle cam.

3. Rotate the vacuum break lever counterclockwise toward the closed choke until the vacuum break tang contacts off-set in the vacuum break dash pot rod.

4. With the choke rod in the bottom of the slot in the choke lever, measure the distance between the lower edge of the choke plate and inside the air horn wall (choke lever side).

5. Bend the vacuum break tang to adjust.

UNLOADER (DECHOKE) ADJUSTMENT

1. Hold the choke plate in the closed position. This can be done by attaching a rubber band or spring to the vacuum break lever and a station-

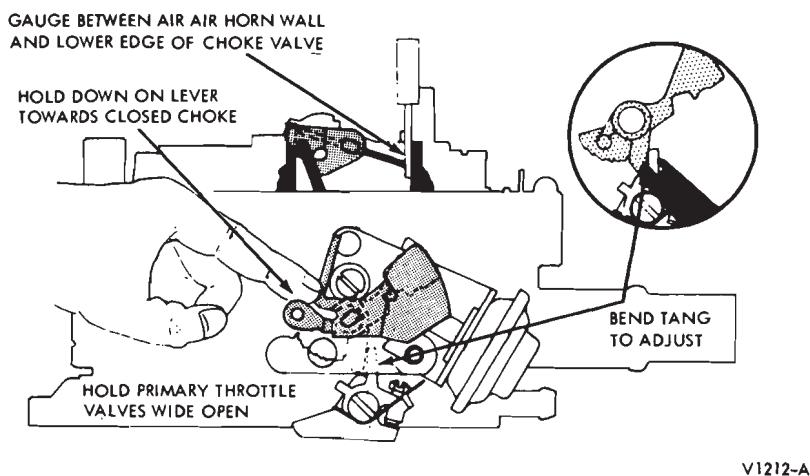
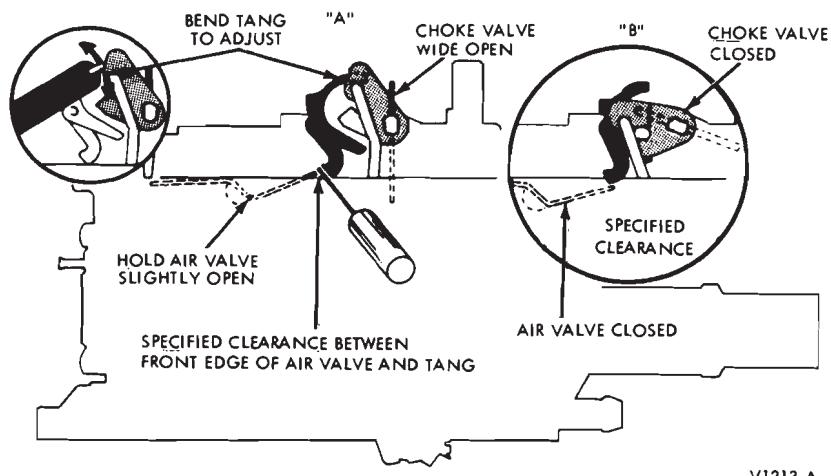


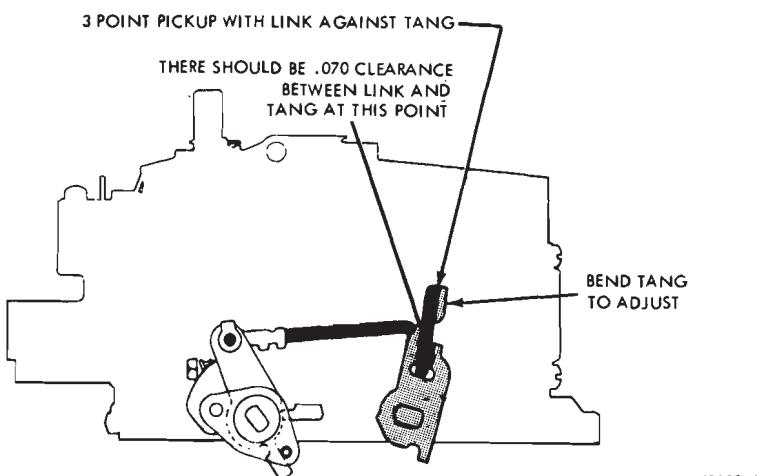
FIG. 7—Unloader Adjustment

V1212-A



V1213-A

FIG. 8—Air Valve Lockout Adjustment



V1209-A

FIG. 9—Secondary Throttle Opening Adjustment

ary part of the carburetor.

2. Open the primary throttle plates to the wide open position.

3. Insert the specified plug gauge between the lower edge of the choke plates and inside the air horn wall (Fig. 7). The choke rod should be in bottom of slot when checking setting.

4. To adjust, bend the tang on the fast idle lever to the rear to increase and to the front to decrease the clearance. It is advisable to recheck the unloader setting after the carburetor is installed on the engine by depressing the accelerator pedal.

AIR VALVE LOCKOUT ADJUSTMENT

1. Rotate the vacuum break lever clockwise until the choke plate is wide open (Fig. 8). The rod must be in the upper end of the slot.

2. Open the air valve slightly so that the edge of the air valve is opposite the tang on the lockout lever.

3. Measure the distance between the tang on the lockout lever and the edge of the air valve. Dimension should be as specified.

4. To adjust, bend the upper end of the lockout lever forward to increase and rearward to decrease the clearance.

Close the choke plate after adjustment to make sure the lower edge of the lockout lever clears the top edge of the air valve for proper locking during choke operation. If the lockout lever does not swing over the top edge of the air valve, make sure the air valve is properly seated. If it is not, file the top edge of the valve for clearance.

SECONDARY THROTTLE OPENING ADJUSTMENT

For correct opening of the secondary throttle plates, the following adjustment should be checked:

Three Point Pick-Up

Open the primary throttle plates until the actuating link contacts the top of the tang on the secondary lever.

The three-point pick-up should have 0.070-inch clearance (Fig. 9).

Bend the tang on the secondary lever to adjust.

SECONDARY THROTTLE CLOSING ADJUSTMENT

To provide proper closing of the

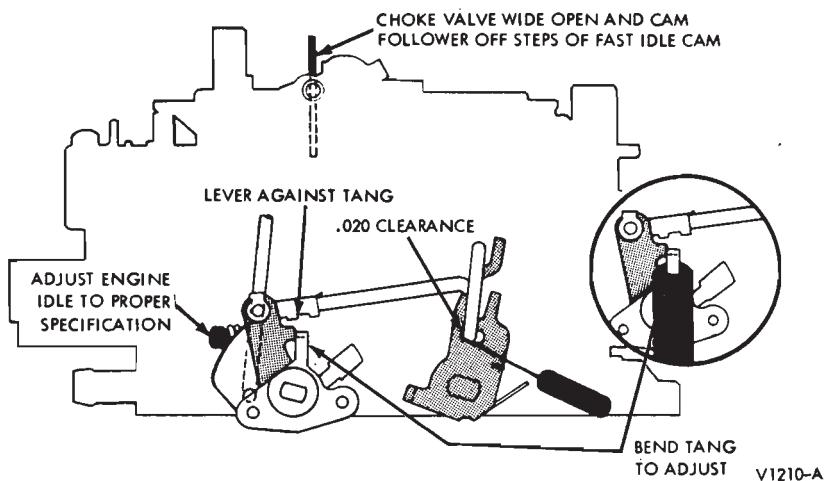


FIG. 10—Secondary Throttle Closing Adjustment

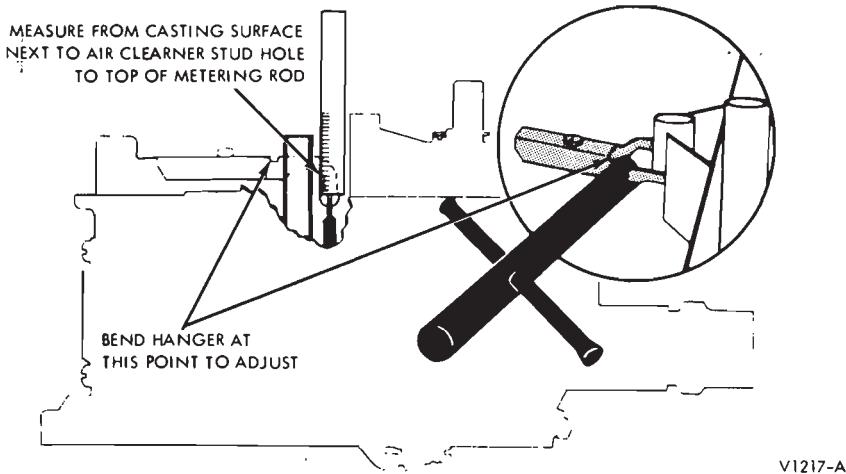


FIG. 11—Secondary Metering Rod Adjustment

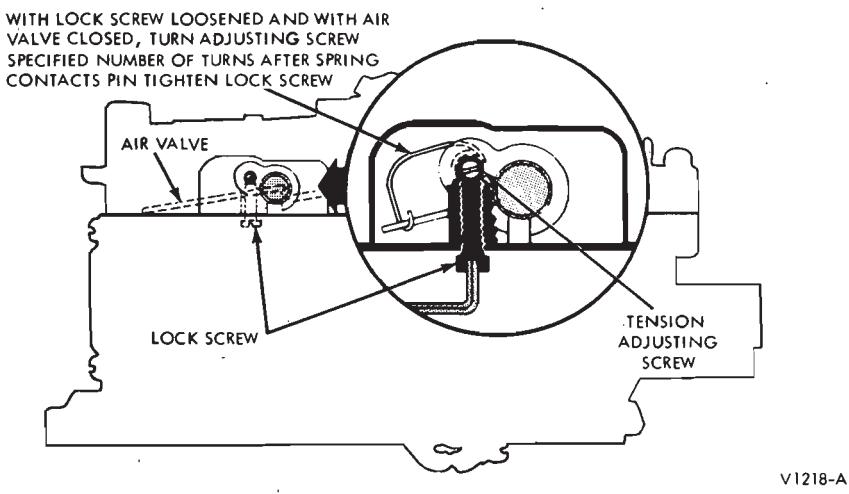


FIG. 12—Air Valve Closing Spring Adjustment

secondary throttle plates, the closing adjustment can be made as follows:

1. Turn the curb idle screw 1 1/2 turns in after it contacts the throttle lever. This is a **preliminary adjustment only**. Make sure cam follower is not resting on the fast idle cam.

2. There should be 0.020-inch clearance between the actuating link and the front of the slot in the secondary lever when the tang of the actuating lever on the primary shaft is against the pin (Fig. 10).

3. Bend the tang on the primary actuating lever to adjust.

SECONDARY METERING ROD ADJUSTMENT

Make sure the air valves are completely closed.

To check the secondary metering rod adjustment, measure from the top of the metering rod to the top of the air horn casting next to the air cleaner stud hole (Fig. 11). The dimension should be as specified.

To adjust, bend the metering rod hanger. **Make sure both rods are adjusted to the same dimension.**

AIR VALVE CLOSING SPRING ADJUSTMENT

To adjust the air valve spring wind-up, loosen the lock screw (allen screw) and turn the spring fulcrum pin counterclockwise to remove all spring tension. With the air valve closed, turn the fulcrum pin clockwise the specified number of turns after the loop on the torsion spring contacts the pin on the shaft. Hold the adjusting screw in this position, tighten lock screw (Fig. 12).

CHOKE COIL ROD ADJUSTMENT

Disconnect the choke coil rod from the vacuum break lever (Fig. 13). Rotate the vacuum break lever counterclockwise until the choke plate is completely closed.

To adjust the choke coil rod, push or pull the rod until it hits the stop in the choke coil housing. Then bend the rod so that it just fits into the hole in the vacuum break lever.

With the choke plate completely closed and the coil rod against the stop in the choke coil housing, the upper end of the rod should just enter the hole in the vacuum break lever. From this point, bend the coil rod (Fig. 13) so that it goes one diameter beyond the hole to give the choke

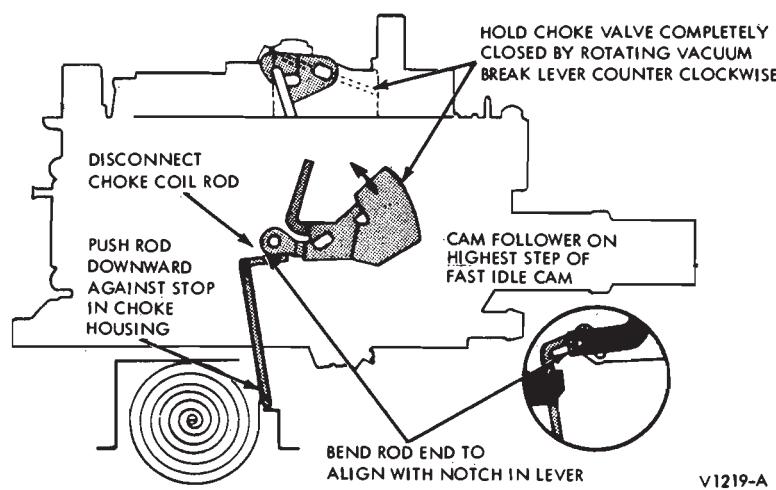


FIG. 13—Choke Coil Rod Adjustment

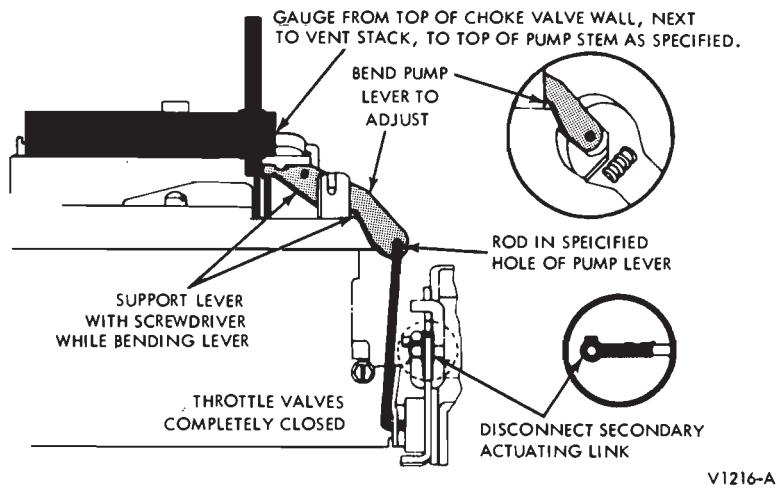


FIG. 14—Pump Rod Adjustment

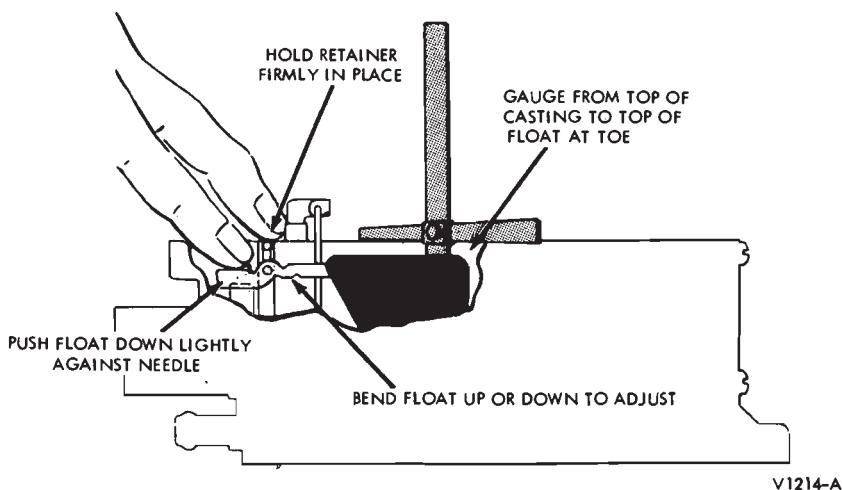


FIG. 15—Adjusting Float Level

plate extra closing pressure.

PUMP ROD ADJUSTMENT

To check this adjustment the primary throttle plates must be completely closed. Back out the idle stop screw on the bowl from the stop tang on the throttle lever.

Bend the secondary throttle closing tang away from the primary lever.

With the throttle plates completely closed and the pump rod in the specified hole in the pump lever, measure the distance from the top of the choke plate wall, next to vent stack, to the top of the pump stem with an adjustable T-scale. The dimension should be as specified. Bend the pump lever as shown to adjust (Fig. 14).

FUEL LEVEL FLOAT ADJUSTMENT

1. Remove the air horn assembly (refer to Major Repair Operations).

2. With an adjustable T-scale, measure the distance from the top of the float bowl surface (gasket removed) to the top of the float at the toe (locate gauging point $1/16$ -inch back from the toe on the float surface). **Do not gauge on top of part number.**

When checking the adjustment make sure the float hinge pin is firmly seated and the float arm is held down against the float needle so that it is seated.

3. To adjust, bend the float pontoon up or down at the point shown in Fig. 15.

4. Install a new air horn gasket on the float bowl, then install the air horn.

2 MAJOR REPAIR OPERATIONS

DISASSEMBLY

To facilitate working on the carburetor, and to prevent damage to the throttle plates, install the carburetor on a holding fixture.

Use a separate container for the component parts of the various assemblies to facilitate cleaning, inspection and assembly.

Refer to Part 23-01 for removal and installation and cleaning and inspection.

The following is a step-by-step sequence of operations for completely overhauling the carburetor. However certain components of the carburetor may be serviced without a complete disassembly of the entire unit. For a complete carburetor overhaul, follow all of the steps. To partially overhaul a carburetor, follow only the applicable steps.

AIR HORN

Removal

Refer to Fig. 16 for identification of components and related parts for removal procedures.

1. Remove the clip from the upper end of the choke rod, disconnect upper end of choke rod from upper choke shaft lever. Remove the choke rod from the lower choke lever in the bowl by working the choke rod up and down until lower end of rod is free from lever.

2. Remove the clip from upper end of the pump rod; then disconnect pump rod from the pump lever.

3. Remove the vacuum break rod from vacuum diaphragm plunger by removing the retaining clip. Remove the other end of rod from air valve shaft lever.

4. Remove the secondary metering rods by removing small screw at top of the metering rod holder. Remove the rod holder and rods by lifting straight upward out of the air horn. Remove the secondary rods from the rod holder by sliding the end of each rod out of holder.

5. Remove the nine air horn-to-float bowl attaching screws. Two counter-sunk screws are located inside the air horn bore next to the primary venturi.

6. Remove the air horn by lifting straight up. The air horn gasket

should remain on the bowl for removal later.

Invert the air horn on a clean bench. Do not bend the two small secondary main well air bleed tubes and accelerating well tubes. The tubes protrude from the air horn casting and are permanently pressed in place. Do not remove.

Disassembly

Refer to Fig. 16 for identification of the components and related parts for disassembly procedure.

1. Remove the two choke valve attaching screws. Then remove the choke valve and shaft.

2. Remove the pump lever roll pin and pump lever.

3. Remove the air valve lockout lever by driving the roll pin out with small drift punch.

4. If the air valve spring or secondary metering rod cam requires replacement, a repair kit is available. To replace these parts proceed as follows:

a. Remove air valve spring fulcrum pin lock screw.

b. Remove air valve spring fulcrum pin from casting.

c. Remove air valve spring.

d. Remove the four air valve attaching screws and remove valves from shaft.

e. Remove the air valve shaft by sliding out of air horn casting. Then, the plastic metering rod cam can be removed.

No further disassembly of the air horn is required.

Assembly

Refer to Fig. 16 for identification of the components and related parts for assembly procedure.

1. Install the pump lever and roll pin.

2. Install the dash pot plunger rod through the air horn and attach to the air valve lever. Install the clip retainer.

3. Install the air valve lockout lever and roll pin. Make sure the lever is free from binds.

4. Install the choke shaft, choke plate and two attaching screws. Tighten and stake choke plate screws.

5. If it was necessary to replace the air valve closing spring, and the air

valve shaft was removed, install the air valve shaft, plastic cam, air valves, and attaching screws. Center the air valves, tighten screws and stake in place. Make sure air valve operates freely with no binds. Then install the air valve closing spring in the air horn cavity. Insert the spring pin, adjust air valve closing spring.

Installation

1. Carefully place the air horn assembly on the float bowl, aligning secondary well bleed tubes and accelerating well tubes with the proper holes in air horn gasket. Position the pump plunger stem with the hole in the air horn and dash pot in the well in the float bowl. Gently lower the air horn assembly until it is seated on gasket.

2. Install the nine air horn-to-float bowl attaching screws. Two long screws go through the secondary side of the air horn at the rear and two counter-sunk screws inside the primary bores next to the venturi. Tighten all screws evenly and securely in sequence as shown in Fig. 17.

3. Install the upper end of the pump rod into the specified hole in the pump lever. Retain with spring clip.

4. Install the choke rod into the lower inside lever in the float bowl cavity. Connect the upper end to the choke shaft lever and retain with clip.

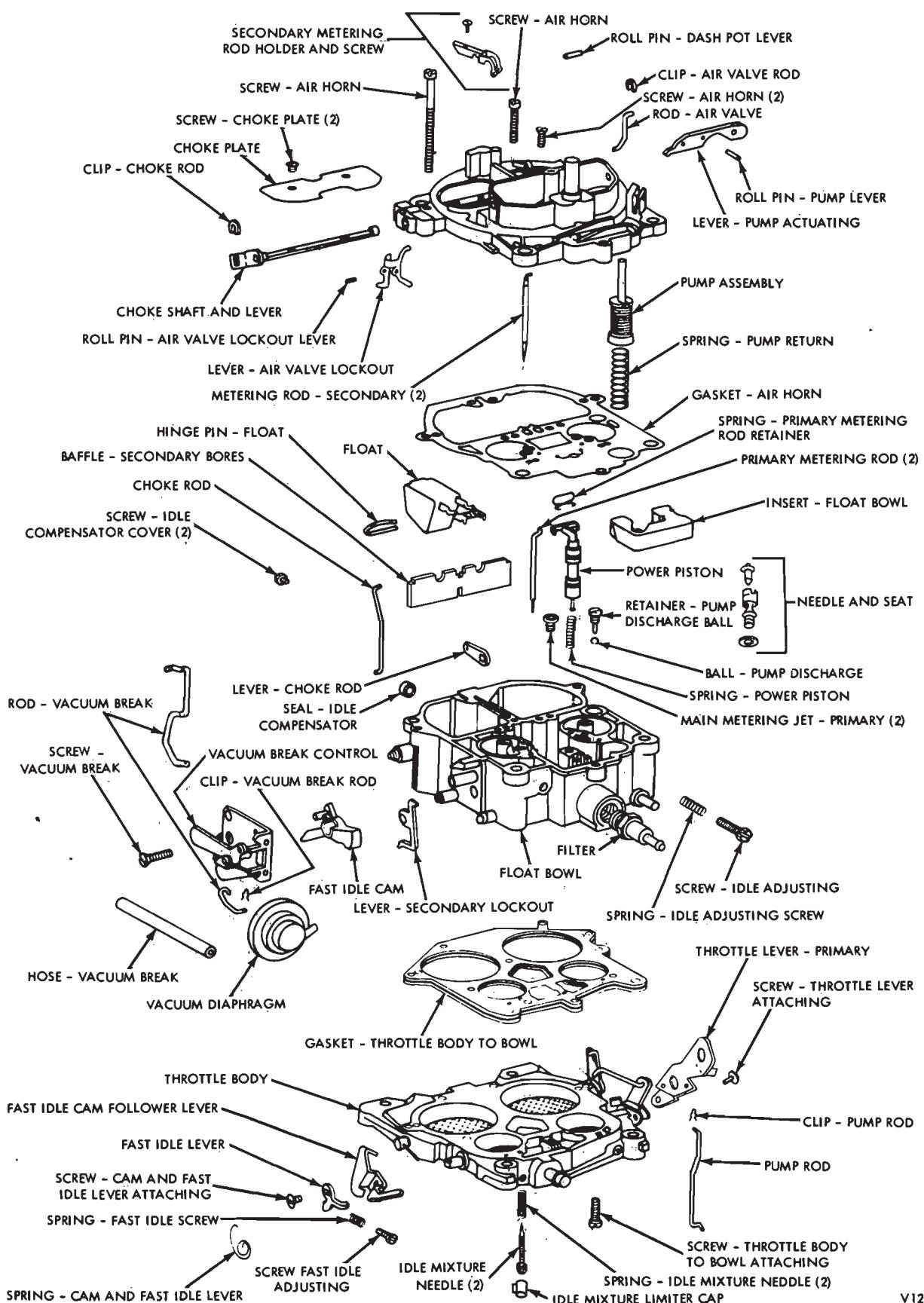
5. Install the end of the combination vacuum break and air valve dash pot rod into the lever on the end of the air valve shaft. End of rod goes inward towards air valves—connect the other end of rod to the choke diaphragm plunger. Retain with clip.

6. Install the secondary metering rods into the metering rod holder. End of rods point inward, towards each other.

7. Carefully lower the secondary rods through the holes in air horn into secondary main metering orifice plates. The holder will then seat on the secondary metering rod actuating lever. Install the retaining screw and tighten securely. Open and close air valve to check for any binds.

THROTTLE BODY

Refer to Fig. 16 for identification of the components and related parts.



V1221-A

FIG. 16—Rochester Model 4MV Carburetor Assembly

Disassembly

1. Remove the pump rod from the throttle lever by rotating the rod out of the primary throttle lever.
2. Remove the two idle limiters and idle mixture screws and springs.
3. The fast idle lever and fast idle cam follower lever can be removed for replacement by removing the at-

taching screw in the end of the primary throttle shaft.

There is a torsion spring which ties the two levers together. Make sure to check the spring location for ease in reassembly.

Assembly

1. Install the fast idle cam follower and the fast idle lever on end of primary throttle shaft. Install the torsion spring and retaining screw in the end of the shaft. Tighten securely.

2. Install the two idle mixture needles and springs until lightly seated. Back out the mixture needles 1 1/2 turn as an initial adjustment if the idle limiters have been removed.

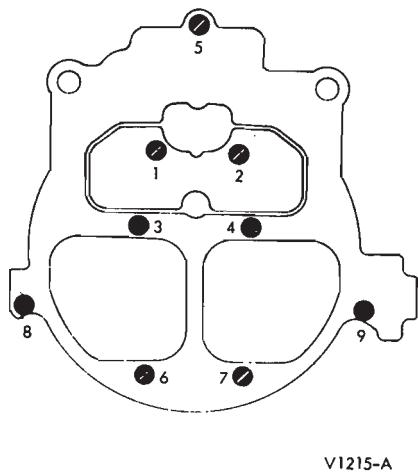
3. Install the pump rod into the hole in the throttle lever. The end of the rod points outward away from the casting.

FLOAT BOWL

Refer to Figs. 16 and 18 for identification of the float bowl and related parts.

Disassembly

1. Remove the pump plunger from

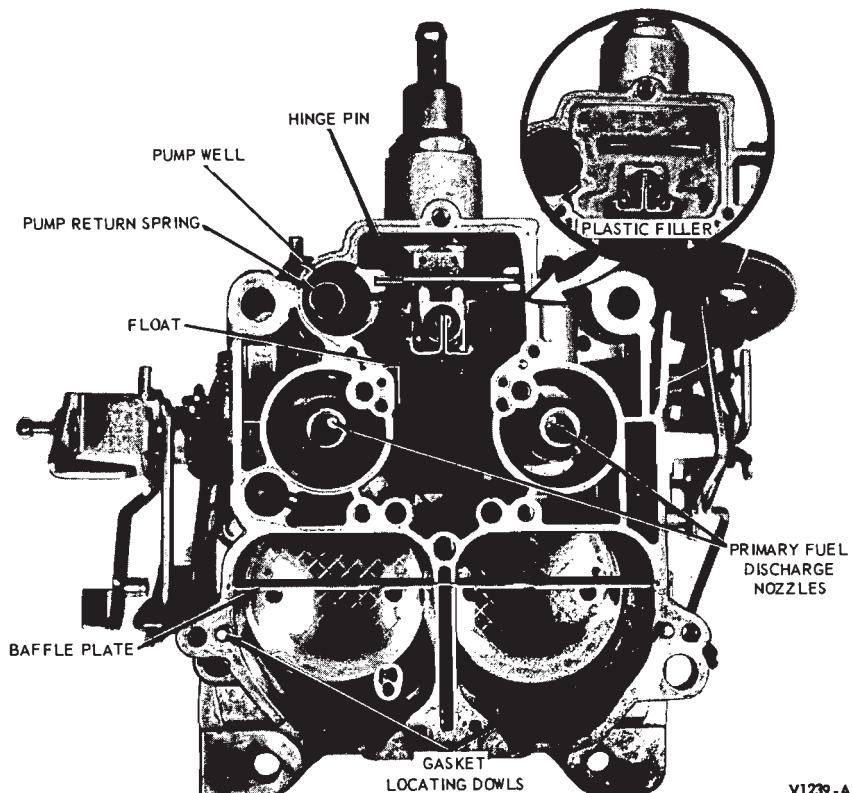


V1215-A

FIG. 17—Air Horn Attaching Screws Tightening Sequence

- the pump well.
2. Remove the air horn gasket from the dowels on the secondary side of the bowl, then remove the gasket from around the power piston and primary metering rods.
3. Remove the pump return spring from the pump well.
4. Remove the plastic filler block over the float valve (Fig. 18).
5. Remove the power piston and the primary metering rods as an assembly.
- The power piston retainer is plastic and is part of the power piston assembly. The retainer fits in a recess at the top of the power piston cavity. The retainer can be removed by pushing downward against spring tension and allowing the piston to snap back against the retainer until it pops out of casting.
6. Remove the primary metering rods from the power piston by disconnecting the tension spring loops from the top of each rod, then rotate each metering rod to remove from hanger. Use care when disassembling the rods to prevent distortion of the tension spring and/or metering rods.
7. Remove the power piston spring from the power piston cavity.
8. Remove the float assembly by pulling upward on hinge pin. The float needle and hinge pin can now be removed from the float assembly.
9. Remove the float needle seat and gasket from the float bowl.
- Float needle and seat are factory matched and tested and should be replaced as a set.
10. Remove the primary main metering jets. No attempt should be made to remove secondary metering discs. Normal cleaning is all that is necessary.
11. Remove the pump discharge check ball retainer and steel check ball.
12. Remove the baffle plate from the secondary bores by lifting straight upward, out of slots in the sides of the bores.
13. Remove the vacuum hose from the vacuum break diaphragm unit and from the tube connection on the bowl.
14. Remove the retaining screw from the choke bracket assembly and remove the assembly from the float bowl.
15. Slide the fast idle cam off of the bushing on the choke bracket.
16. Spread the retaining ears on the bracket next to the vacuum diaphragm, then slide the vacuum diaphragm assembly out of the bracket.

FIG. 18—Float Bowl



V1239-A

Assembly

1. Install a new throttle body-to-bowl insulator gasket, making sure the gasket is properly positioned on two locating dowels on the bottom of the float bowl.

2. Install the throttle body, making certain throttle body is properly located over dowels on the float bowl. Install three throttle body-to-bowl screws and tighten evenly and securely.

3. Place the carburetor on a work stand or holding fixture.

4. Install a fuel inlet filter and tighten securely.

• 5. Install the float needle seat and gasket and tighten securely.

6. Install the float hinge pin in the float arm with the open end of the hinge pin points toward the pump well.

7. Install the float needle and the pull clip on the end of the float arm. The needle pull clip should be in-

stalled so that it hooks over the top of the float arm. **Do not place pull clip through small holes in top of float arm. Severe flooding will result.**

8. Lower the float assembly into the float bowl making sure the needle enters the float needle seat and that the float hinge pin seats in the grooves in the bowl casting. The upper loop on the float hinge pin should be above the bowl casting surface (minimum 0.015-inch at highest point) for proper retention.

9. Adjust the fuel lever float as described in In-Vehicle Adjustments and Repairs.

10. Install the power piston spring in the power piston well. If the primary metering rods were removed from the hanger, re-install making sure the tension spring is hooked over the top end of each metering rod. Install the power piston assembly in the well with the metering rods carefully positioned in the metering jets. Press

down firmly on the power piston to provide engagement of the retaining pin in the throttle body gasket.

11. Install the power piston in the well and force the plastic retainer into the cavity until the edge is flush with the top of the casting.

12. Install the plastic filler block over the float needle; press downward until seated.

13. Install the pump return spring into the pump well.

14. Install the air horn gasket around the primary metering rods and piston. Position the gaskets over the two dowels on the secondary side of the float bowl.

15. Install the pump plunger in the pump well, then install the air horn.

16. Install the carburetor on the engine. Tighten the mounting bolts to the specified torque. First, tighten a front bolt, then the diagonal rear bolt, then the other front bolt to the other rear bolt.

3 SPECIFICATIONS

ROCHESTER QUADRAJET MODEL 4MV CARBURETOR

Vehicle	Engine CID	Transmission	Carburetor Number (9510)	Air-Fuel Ratio
Fairlane, Montego	429 Cobra Jet	Manual	DOOF-A	14.40
Fairlane, Montego	429 Cobra Jet	Automatic	DOOF-B	14.50
Fairlane, Montego	429 Cobra Jet	Automatic	DOOF-E Air Conditioned	14.50
Fairlane, Montego	429 Cobra Jet	Manual	DOOF-F Air Conditioned	14.40
<hr/>				
Carburetor Number (9510)	DOOF-A	DOOF-B	DOOF-E	DOOF-F
<hr/>				
CARBURETOR SIZE				
Throttle Bore Diameter - Primary			1 3/8	
- Secondary			2 1/4	
Venturi Diameter - Primary			1 3/32	
Air Flow (cfm)			715	
<hr/>				
ADJUSTMENTS				
Float Level			5/8	
Pump Rod Location			Outboard	
Air Valve Dashpot Adj.			0.030	
Pulldown Vacuum Break Adj.	0.140		0.190	0.140
Cam Clearance (Choke Rod)	130		0.166	130
Unloader			0.300	
Air Valve Lockout Adj.			0.015	
Choke Rod Setting			①	
<hr/>				
IDLE SPEED				
Idle rpm ②	700	650	650/500③	700/500④
Fast Idle	750⑤	1850⑥		750⑦
<hr/>				
TORQUE REQUIREMENTS				Long-6-8 Ft lbs.
Carburetor Mounting Bolts				Short-8-14 Ft lbs.
<hr/>				
① Rotate the vacuum break lever counterclockwise to close the choke and hold the choke bi-metal down against its stop in this position. The rod from the choke should be a half hole diameter from entering the lever.				
② Headlamps on Hi-Beam - Air Conditioning OFF (if equipped)				
③ 3rd Step of Cam				
④ 2nd Step of Cam				
⑤ Higher idle speed with throttle solenoid energized-lower idle speed with throttle de-energized.				

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PART 23-08 Air Cleaner and Duct System

COMPONENT INDEX	Page	COMPONENT INDEX	Page
AIR CLEANER Removal and Installation - See Part 23-01	08-04	DUCT AND VALVE ASSEMBLY— TEMPERATURE OPERATED Installation	08-04
AUXILIARY AIR INLET VALVE Test	08-02	Removal	08-04
CHOKE BLEED VALVE— 428 POLICE INTERCEPTER Test	08-03	Test	08-01
CRANKCASE VENTILATION FILTER— 351 C ENGINE Installation	08-04	DUCT AND VALVE ASSEMBLY— VACUUM OPERATED Installation	08-04
Removal	08-04	Removal	08-04
		Test	08-02
		RAM AIR INTAKE Test	08-03

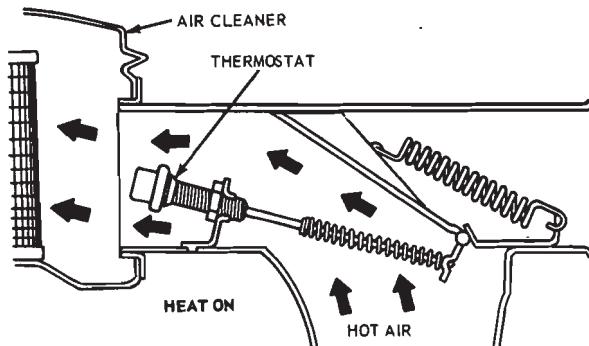
1 HOT AND COLD-TYPE AIR INTAKE SYSTEM TESTS

Improper functioning of this system will affect the vehicle exhaust emission control system and may result in failure of the vehicle to meet Federal emission regulations as well as affecting driveability.

To determine whether the system is functioning properly, the following procedures should be used:

DUCT AND VALVE ASSEMBLY—TEMPERATURE OPERATED

A temperature operated duct and valve assembly (Fig. 1) is used on all engines except 351 C engines.



TEST

1. With duct assembly installed on the vehicle, cold engine, and ambient temperature in the engine compartment of less than 100 degrees F, the valve plate should be in the **heat on** position (Fig. 1).

2. If the plate is not in the **heat on** position, check for possible interference of plate and duct which would cause the plate to bind in its given travel. Correct, if interference is present, by realigning the plate.

3. Remove the duct and valve assembly from the vehicle.

4. Immerse the duct assembly in water so that the thermostat capsule is covered with water.

5. Raise the water temperature to 100 degrees F, allow 5 minutes to stabilize temperature, and observe the valve plate position. The correct position should be in the **heat on** position (Fig. 1).

6. Increase the water temperature to 135 degrees F, allow five minutes to stabilize the temperature, and observe the valve plate. The valve plate should be in the **heat off** position (Fig. 1).

If the valve plate does not meet the requirements as outlined in steps 5

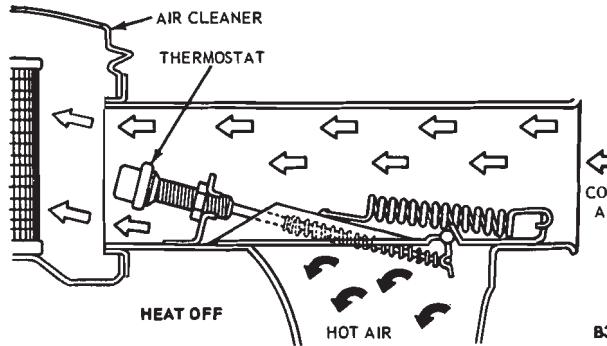


FIG. 1—Temperature Operated Duct and Valve Assembly in Heat-On and Heat-Off Positions

and 6, and no plate and duct interference is observed, the duct and valve assembly should be replaced.

DUCT AND VALVE ASSEMBLY—VACUUM OPERATED

The vacuum operated duct valve (Fig. 2) is used on all 351C engines.

TEST

1. The duct valve should be open

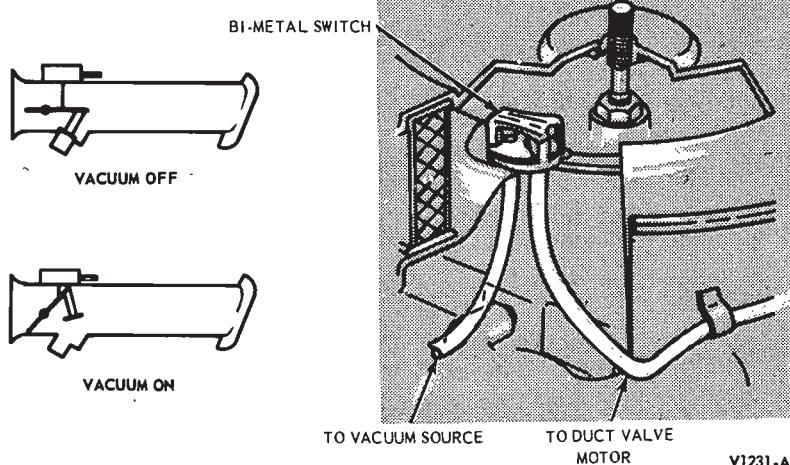


FIG. 2—Vacuum Operated Duct and Valve Assembly

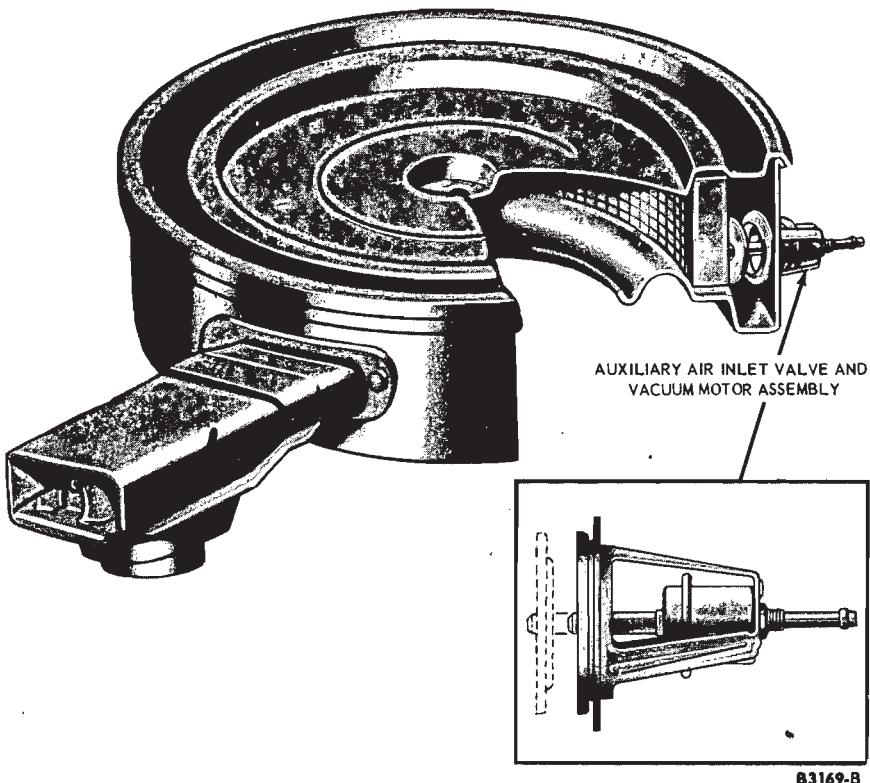


FIG. 3—Air Cleaner With Auxiliary Air Inlet Valve and Vacuum Motor

when the engine is off.

2. Start the engine. The valve should close during engine idle unless the engine has reached normal operating temperature. If the engine is cold and the valve does not close during idle, check for disconnected vacuum lines to the vacuum motor and bi-metal switch. Check the bi-metal switch to see that the bleed valve is seated.

3. Open and close the throttle rapidly. The valve should open during

throttle opening. If the valve does not function properly, check for a binding condition at the valve. Correct as required.

4. The bi-metal switch can be functionally checked by subjecting the switch to heated air or removing and immersing the switch in water heated to 105-110 degrees F. Only slight movement of the bi-metal is necessary to unseat the bleed valve.

AUXILIARY AIR INLET VALVE

In addition to checking the duct and valve assembly, the vacuum motor that is attached to the air cleaner should be checked for functional operation.

TEST

1. Start the engine, observe the vacuum motor plate. It should be fully closed (Fig. 3).

2. Disconnect the vacuum hose at the vacuum motor. The plate should be in the full-open position.

3. If the positions as described, are not obtained, check for interference and alignment of plate and motor rod and vacuum from the hose at the vacuum motor (minimum of 15 inches hg.).

If vacuum is not available, check the hose and connection for leaks.

4. If the vacuum motor plate still remains in one position, remove the vacuum motor from the air cleaner, connect it to another vacuum source to confirm that vacuum motor is not operating. If the motor rod does not move when vacuum is applied, the motor should be replaced.

5. Reassemble the motor to the air cleaner and repeat steps 1 and 2.

RAM AIR INTAKE

The Ram Air system (Figs. 4 and 5) allows outside air to be forced through the functional hood scoop and into the air cleaner during open throttle or heavy load conditions. During normal engine operation, air enters the air cleaner through the conventional duct and valve assembly only.

When the intake manifold vacuum drops to 4 inches Hg (such as during open throttle or heavy loads), the vacuum motor opens the ram air valve, allowing air to be forced into the air cleaner directly from the hood air scoop.

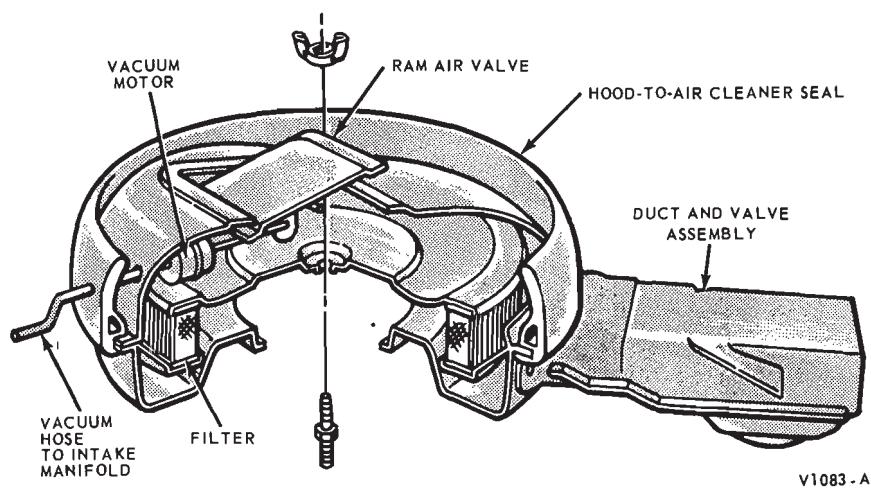


FIG. 4—Ram Air Air Cleaner—Cougar and Montego

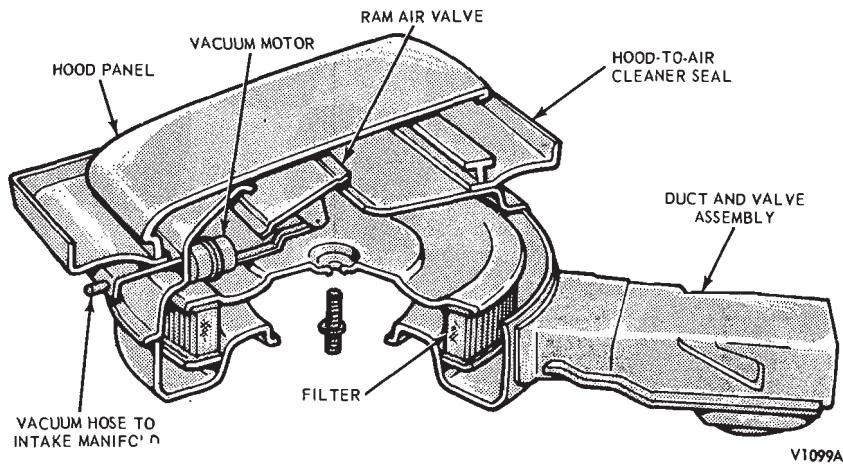


FIG. 5—Ram Air Air Cleaner—Mustang and Fairlane

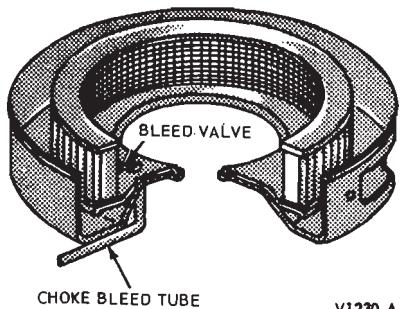


FIG. 6—Choke Bleed Valve—428 Police Interceptor

TEST

To check the operation of the ram air valve, the valve should be in the open position with the engine off, or with the vacuum hose disconnected. The ram air valve should be in the closed position when the engine is operating at curb idle.

If the valve will not fully open or close, check for damage, valve binding, vacuum leaks or vacuum line disconnected. To check the operation of the vacuum motor alone, connect the motor to a minimum vacuum of 7 inches Hg. The motor shaft should move to the fully withdrawn position. Replace the vacuum motor if normal operation cannot be accomplished.

Check the hood-to-air cleaner seal for all-around contact. Replace the seal, if distorted.

CHOKE BLEED VALVE—428 POLICE INTERCEPTOR

A thermostatic choke bleed valve is incorporated in the air cleaner on 428 CID Police engines (Fig. 6). The bleed valve allows cold air to be blended with the hot air from the choke stove at underhood temperatures below 50 degrees F.

TEST

If the thermostatic air valve does not open at temperatures below 50 degrees F or does not close at temperatures above 50 degrees F the valve must be replaced.

2 REMOVAL AND INSTALLATION

AIR CLEANER

Refer to Part 23-01 for the air cleaner removal and installation and cleaning and inspection procedures.

Refer to the 1970 Passenger Car Maintenance and Lubrication Manual for the air cleaner assembly recommended maintenance mileage interval.

DUCT AND VALVE ASSEMBLY—TEMPERATURE OPERATED

REMOVAL

1. Remove the hex head cap screws that secure the air intake duct and valve assembly to the air cleaner.

2. Remove the air intake duct and valve assembly from the engine.

3. If the duct and valve assembly was removed because of a suspected temperature malfunction, check the operation of the thermostat and valve plate assembly. Refer to the Air Intake Duct Test for the proper procedure.

4. If inspection reveals that the valve plate is sticking or the thermostat is malfunctioning, remove the thermostat and valve plate as follows:

Detach the valve plate tension spring from the valve plate using long-nose pliers. Loosen the thermostat locknut and unscrew the thermostat from the mounting bracket. Grasp the valve plate and withdraw it from the duct.

INSTALLATION

1. Install the air intake duct and

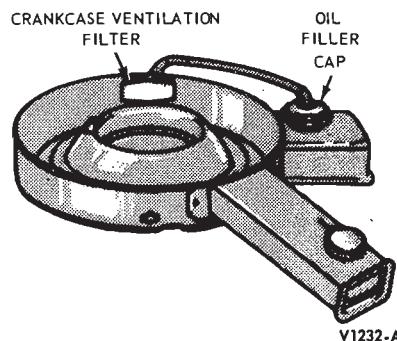


FIG. 7—Crankcase Ventilation Filter—351 C Engines

valve assembly on the shroud tube.

2. Connect the air intake duct and valve assembly to the air cleaner and tighten the 2 hex head retaining cap screws.

3. If it was necessary to disassemble the thermostat and air duct and valve, assemble the unit as follows:

Install the valve plate. Install the locknut on the thermostat, and screw the thermostat into the mounting bracket. Install the valve plate tension spring on the valve plate and duct.

Check the operation of the thermostat and air duct assembly. Refer to the Air Intake Duct Test for the proper procedure. Adjust the thermostat, as required. Tighten the locknut.

4. Install the vacuum override motor (if applicable) and check for proper operation.

DUCT AND VALVE ASSEMBLY—VACUUM OPERATED

REMOVAL

1. Disconnect the vacuum hose at the vacuum motor.

2. Remove the hex head cap screws that secure the air intake duct and valve assembly to the air cleaner.

3. Remove the duct and valve assembly from the engine.

INSTALLATION

1. Position the duct and valve assembly to the air cleaner and heat stove tube. Install the attaching cap screws.

2. Connect the vacuum line at the vacuum motor.

CRANKCASE VENTILATION FILTER—351 C ENGINE

The crankcase ventilation filter is shown in Fig. 7.

REMOVAL

1. Disconnect the oil filler cap to air cleaner hose at the air cleaner.

2. Remove the top of the air cleaner.

3. Remove the crankcase ventilation filter retainer and remove the filter.

INSTALLATION

1. Position the crankcase ventilation filter in the air cleaner body and install the retainer.

2. Connect the oil filler cap to air cleaner hose at the air cleaner.

3. Install the top of the air cleaner.

PART 23-09 Fuel Pump

ALL MODELS			
COMPONENT INDEX	Page	COMPONENT INDEX	Page
FUEL PUMPS		FUEL PUMP TESTS	
Assembly - Cobra Jet and Police Interceptor ...	09-03	Capacity (Volume) Tests	09-02
Assembly - Permanently Sealed Type	09-02	Pressure Tests	09-02
Disassembly - Cobra Jet and Police		SPECIFICATION	09-04
Interceptor	09-03		
Disassembly - Permanently Sealed Type	09-02		

DESCRIPTION

A single action fuel pump is standard equipment for all vehicle models.

The fuel pump on the 6-cylinder engine is mounted on the lower, left-center of the engine cylinder block.

On all V-8 engines, the fuel pump is mounted on the left-side of the cylinder front cover.

Refer to Figs. 1, 2 and 3 for views of the fuel pumps.

A separate in-line fuel filter is used on all engines. The filter is of one-piece construction and does not con-

tain a cleanable filter element.

The fuel pumps are mechanically actuated by means of the fuel pump rocker arm and an eccentric on the camshaft.

The fuel pump for the 429 Cobra Jet is equipped with a fuel return line to the fuel tank. The return line connection has a calibrated bleed which provides a constant flow of fuel from the pump back to the fuel tank to

help improve hot fuel handling characteristics.

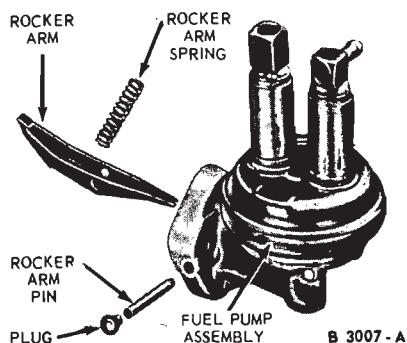


FIG. 1—Carter
Permanently-Sealed Fuel Pump
for 6-Cylinder Engines

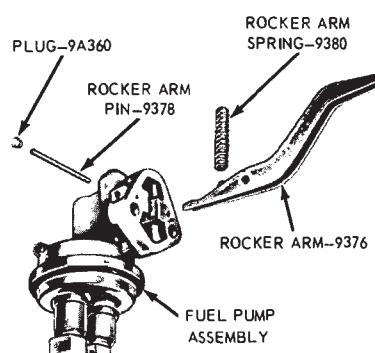


FIG. 2—Carter
Permanently-Sealed Fuel Pump
for V-8 Engines

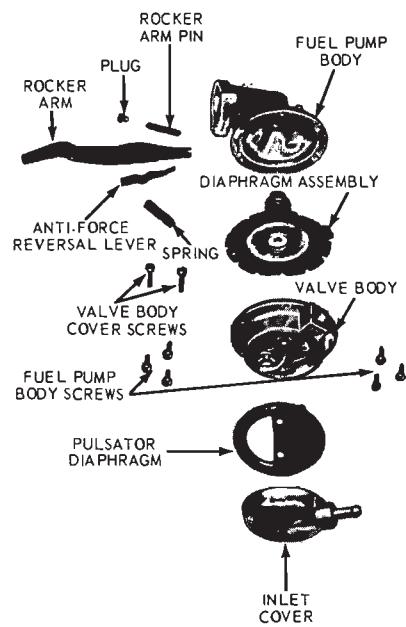


FIG. 3—Carter Fuel Pump for
429 Cobra Jet and 429 Police
Interceptor

1 FUEL PUMP TESTS

Incorrect fuel pump pressure and low volume (capacity or flow rate) are the two most likely fuel pump troubles that will affect engine performance. Low pressure will cause a lean mixture and fuel starvation at

high speeds and excessive pressure will cause high fuel consumption and carburetor flooding. Low volume will cause fuel starvation at high speeds.

To determine that the fuel pump is in satisfactory operating condition,

tests for both fuel pump pressure and fuel pump capacity (volume) should be performed.

The tests are performed with the fuel pump installed on the engine and the engine at normal operating tem-

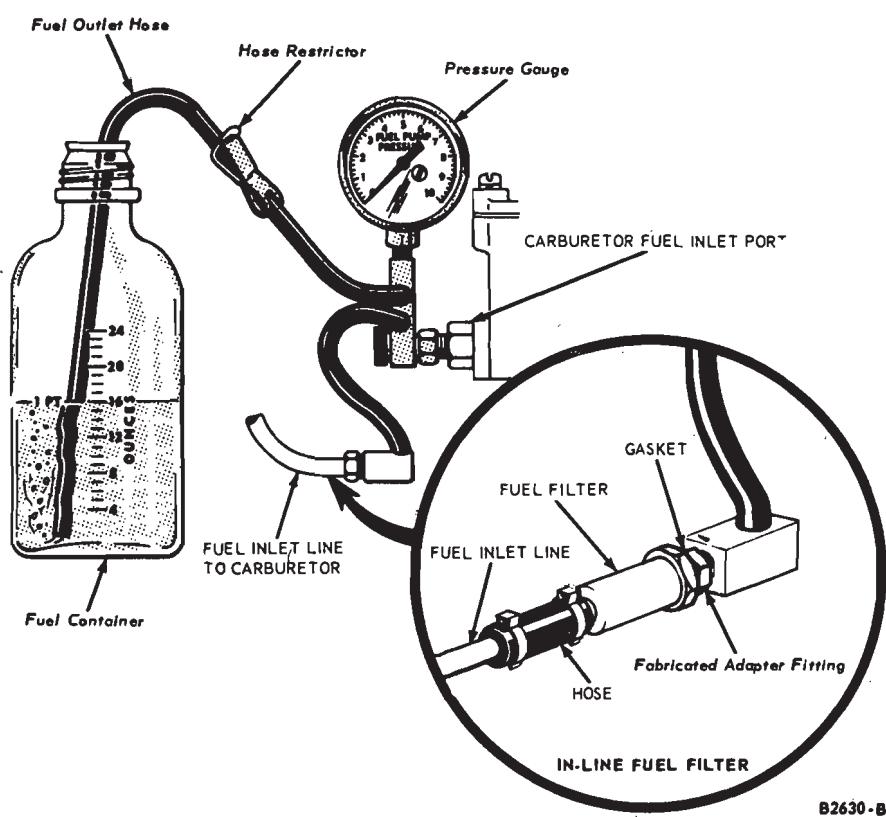


FIG. 4—Typical Fuel Pump Pressure and Capacity Test Equipment

perature and at idle speed.

On the 429 Cobra Jet, all pressure and volume tests must be made with the fuel return line inoperative. Pinch-off the fuel return line near the pump, using a suitable clamp, when making fuel pump tests.

Before the tests, make sure the replaceable fuel filter has been changed within the recommended maintenance mileage interval. When in doubt, install a new filter.

PRESSURE TESTS

Refer to Fuel System Specifications at the end of this Part and note the fuel pump pressure and capacity (volume) design tolerances.

1. Remove the air cleaner assembly. Disconnect the fuel inlet line or the fuel filter at the carburetor. Use care to prevent combustion due to fuel spillage.

2. Connect a pressure gauge, a restrictor and a flexible hose (Fig. 4)

between the fuel filter and the carburetor.

3. Position the flexible hose and the restrictor so the fuel can be discharged into a suitable, graduated container (Fig. 4).

4. Before taking a pressure reading operate the engine at the specified idle rpm and vent the system into the container by opening the hose restrictor momentarily.

5. Close the hose restrictor, allow the pressure to stabilize, and note the reading.

If the pump pressure is not within specifications, and the fuel lines and filter are in satisfactory condition, the pump is defective and should be replaced.

If the pump pressure is within specifications, perform the test for fuel capacity (volume).

CAPACITY (VOLUME) TEST

With the fuel pump pressure within specifications, test the capacity (volume) as follows:

1. Operate the engine at the specified idle rpm.

2. Open the hose restrictor and allow the fuel to discharge into the graduated container (Fig. 4) for the specified time; then close the restrictor. At least one pint of fuel should have been discharged within the specified time limit.

If the pump volume is below specifications, repeat the test using an auxiliary fuel supply and a new fuel filter. If the pump volume meets specifications while using the auxiliary fuel supply, check for a restriction in the fuel supply from the tank and for the tank not venting properly.

2 MAJOR REPAIR OPERATIONS

Refer to Part 23-01 for removal and installation and cleaning and inspection procedures.

CARTER PERMANENTLY SEALED FUEL PUMPS

DISASSEMBLY

The fuel pump assemblies are shown in Figs. 1, 2 and 3.

1. Scrape away the staking mark and remove the rocker arm pin re-

taining plug as shown in Fig. 5.

2. Release the tension on the rocker arm pin by pressing the arm downward against the diaphragm and rocker arm spring pressure or remove the rocker arm spring and allow the rocker arm pin to fall out. If the pin does not come out freely, tap the fuel pump assembly lightly on the bench until the pin sticks out of the bore or remove the pin with needle nose pliers (Fig. 6). Remove the rocker arm.

3. Clean and inspect the serviceable

fuel pump component parts. Refer to Cleaning and Inspection (Part 10-1) for the proper procedure. Replace all worn or damaged parts.

ASSEMBLY

The fuel pump assemblies are shown in Figs. 1, 2 and 3.

1. Insert the rocker arm spring into the spring guide bore in the fuel pump rocker arm cavity.

2. Insert the rocker arm into the

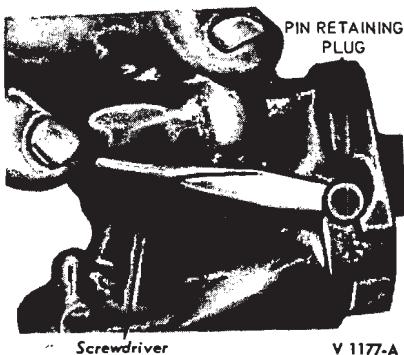


FIG. 5—Rocker Arm Pin Retaining Plug Removal

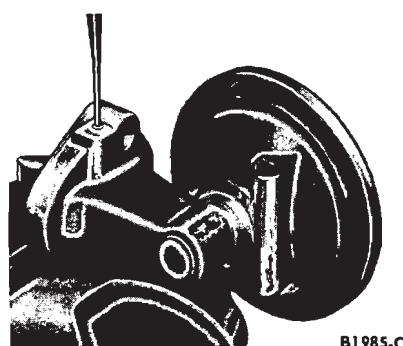


FIG. 7—Staking the Pin Retaining Plug

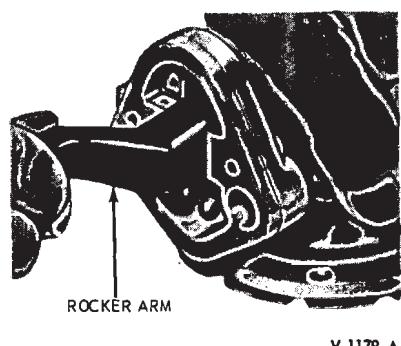


FIG. 9—Fuel Pump Diaphragm Removal or Installation

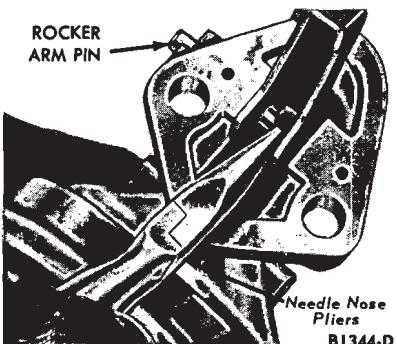


FIG. 6—Rocker Arm Pin Removal or Installation

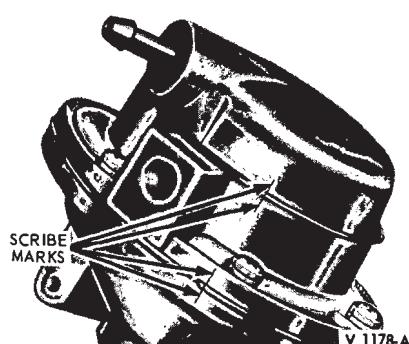


FIG. 8—Scribe Marked Fuel Pump

cavity and install it onto the diaphragm rod, directly below the rod bumper pad. Position the rocker arm spring over the spring locator on the rocker arm or on the anti-force reversal lever. Align the rocker arm pin holes and install the rocker arm pin. Make certain the rocker arm spring is properly positioned on the spring locator on the rocker arm or on the anti-force reversal lever.

3. Install a new rocker arm pin retaining plug. Stake the plug into position (Fig. 7).

CARTER FUEL PUMP—429 COBRA JET AND 428 POLICE INTERCEPTOR V-8

DISASSEMBLY

1. Scribe marks on the fuel pump body, valve housing, and valve housing cover (Fig. 8) so that these parts can be assembled in their original position.

2. Remove the valve housing as-

sembly. Separate the valve housing from the cover and note the position of the pulsator diaphragm so that it can be assembled in its proper position. Do not remove the fuel valves from the valve housing. The valve housing is replaced as an assembly.

3. Remove the rocker arm return spring and the anti-force reversal lever.

4. Scrape away the staking mark and remove the rocker arm pin retaining plug as shown in Fig. 5.

5. Press the fuel pump diaphragm into the fuel pump body to release the tension on the rocker arm and allow the rocker arm pin to fall out. If the pin does not come out freely, use needle nose pliers (Fig. 6).

6. Press the diaphragm into the fuel pump body and pull the rocker arm out to release the rod from the rocker arm bumper pad (Fig. 9).

7. Remove the fuel pump diaphragm assembly. Do not disassemble as the diaphragm and spring are serviced as an assembly only.

ASSEMBLY

1. Position the fuel pump diaphragm assembly into the pump body, then apply pressure on the diaphragm spring so that the rocker arm can be installed on the rod as shown in Fig. 9.

2. Align the rocker arm pin holes by applying slight pressure on the diaphragm spring, then install the rocker arm pin.

3. Install a new rocker arm pin retaining plug. Stake the plug in position (Fig. 7). Install the anti-force reversal lever. The inner end of the anti-force reversal lever must be inserted in the opening of the rocker arm behind the rocker arm pin.

4. Position the rocker arm return spring on the boss in the pump body. Compress the spring and slip it over the tang in the anti-force reversal lever.

5. Place a new pulsator diaphragm on the valve housing in the position previously noted on disassembly (opening in the diaphragm over the fuel inlet chamber). Position the cover on the valve housing, aligning the scribed lines on the cover with the line on the valve housing. Be sure the pulsator diaphragm extends evenly around the edge of the cover. Install and tighten the two retaining screws inside the valve housing.

6. Align the scribe line on the valve housing and the line on the fuel pump body. Hold the valve housing assembly tight against the fuel pump body and install the six screws. Be sure the fuel pump diaphragm extends evenly around the edge of the valve housing before tightening the retaining screws.

3 SPECIFICATIONS

FUEL PUMPS

Engine CID	Minimum Volume Flow @ 500 Eng. RPM	Static Pressure PSI @ 500 Eng. RPM	Eccentric Total Lift (inch)
170, 200, 240, 250	1 Pint/30 Sec.	4.0-6.0	0.290-0.310
302 2-V		4.5-6.5	0.690-0.710
302 Boss 4-V		5.0-7.0	
390 2-and 4-V		4.5-6.5	0.602-0.622
351-C 2-and 4-V		5.0-7.0	
351-W 2-V		5.0-7.0	
390 2-and 4-V		5.0-7.0	0.770-0.790
428 CJ and Police		5.0-7.0	
429 2-and 4-V①		6.5-8.5②	0.690-0.710
429 CJ		4.5-6.5	
429 SCJ and BOSS		5.0-7.0	
460		5.0-7.0	

① Except Cobra Jet and BOSS

② With fuel return line inoperative

TORQUE REQUIREMENTS - FT-LBS

Fuel Pump-to-Cylinder Block or Cylinder Front Cover	Six-Cyl. V8	12-15 20-24
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CV1024-B

PART 23-10 Fuel Tank and Fuel Lines

COMPONENT INDEX	All Models	MODEL APPLICATION											
		Ford	Mercury	Meteor	Cougar	Fairlane	Falcon	Maverick	Montego	Mustang	Lincoln-Continental	Thunderbird	Continental-Mark III
FILLER PIPE													
Installation		10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14
Removal		10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-04	10-14	10-14	10-14
FUEL LINES													
Installation		10-16											
Removal		10-16											
Repair		10-16											
FUEL TANK													
Installation		10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-16	10-16
Removal		10-15	10-15	10-15	10-14	10-14	10-14	10-14	10-14	10-14	10-15	10-15	10-15

Numbers in the vertical column show page location.

Standard production fuel tanks, lines and related parts are shown in Figs. 1 through 12.

The special fuel and vent line installations required for fuel evapora-

tive emission control are illustrated and described in Part 23-11. These systems are installed only on vehicles offered for sale in California.

Capacities for the corrosion resistant (terne plate coated steel) fuel tanks are given in the Specifications at the end of this Part.

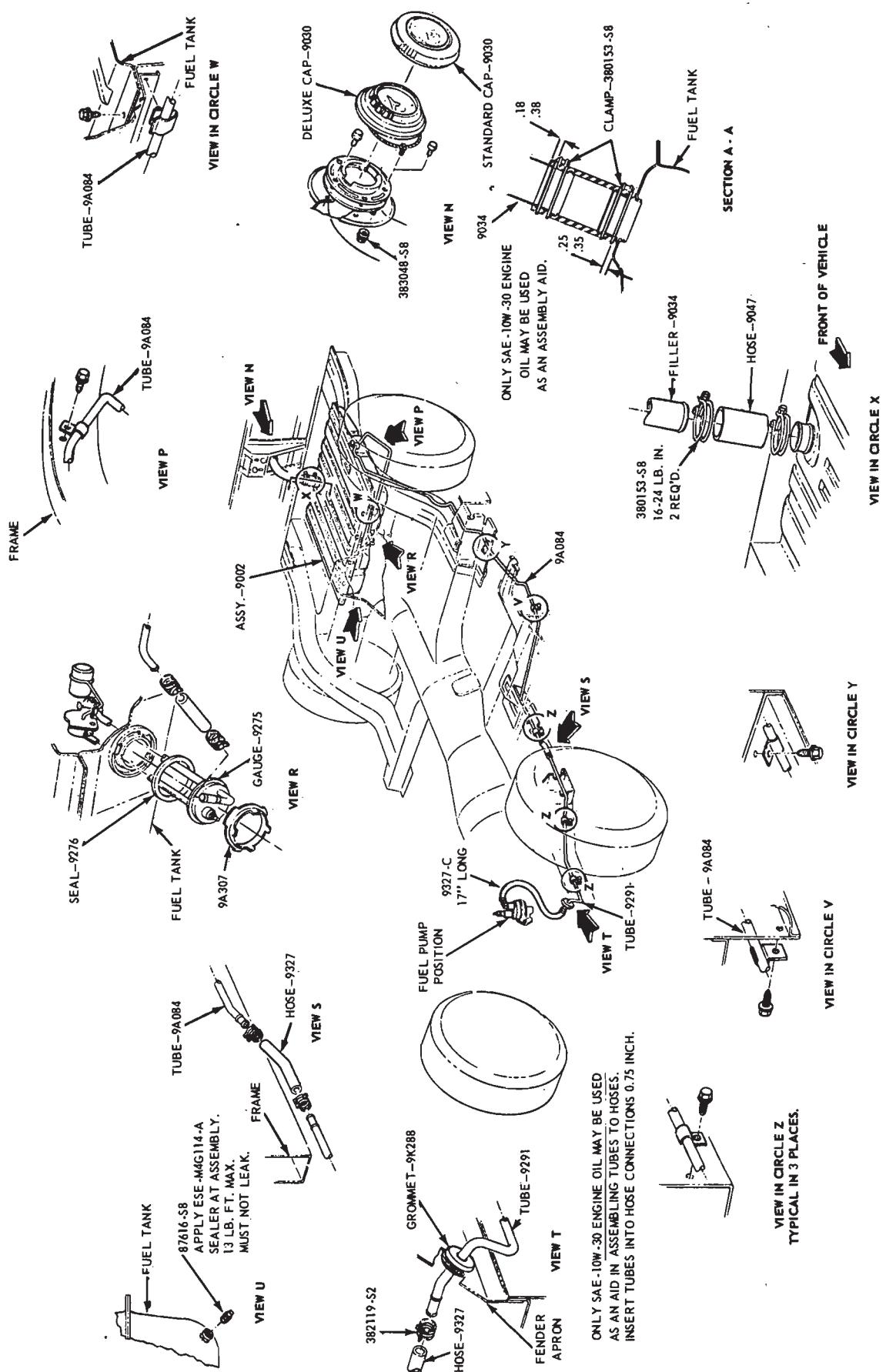


FIG. 1—Fuel System—Maverick

V1283-A

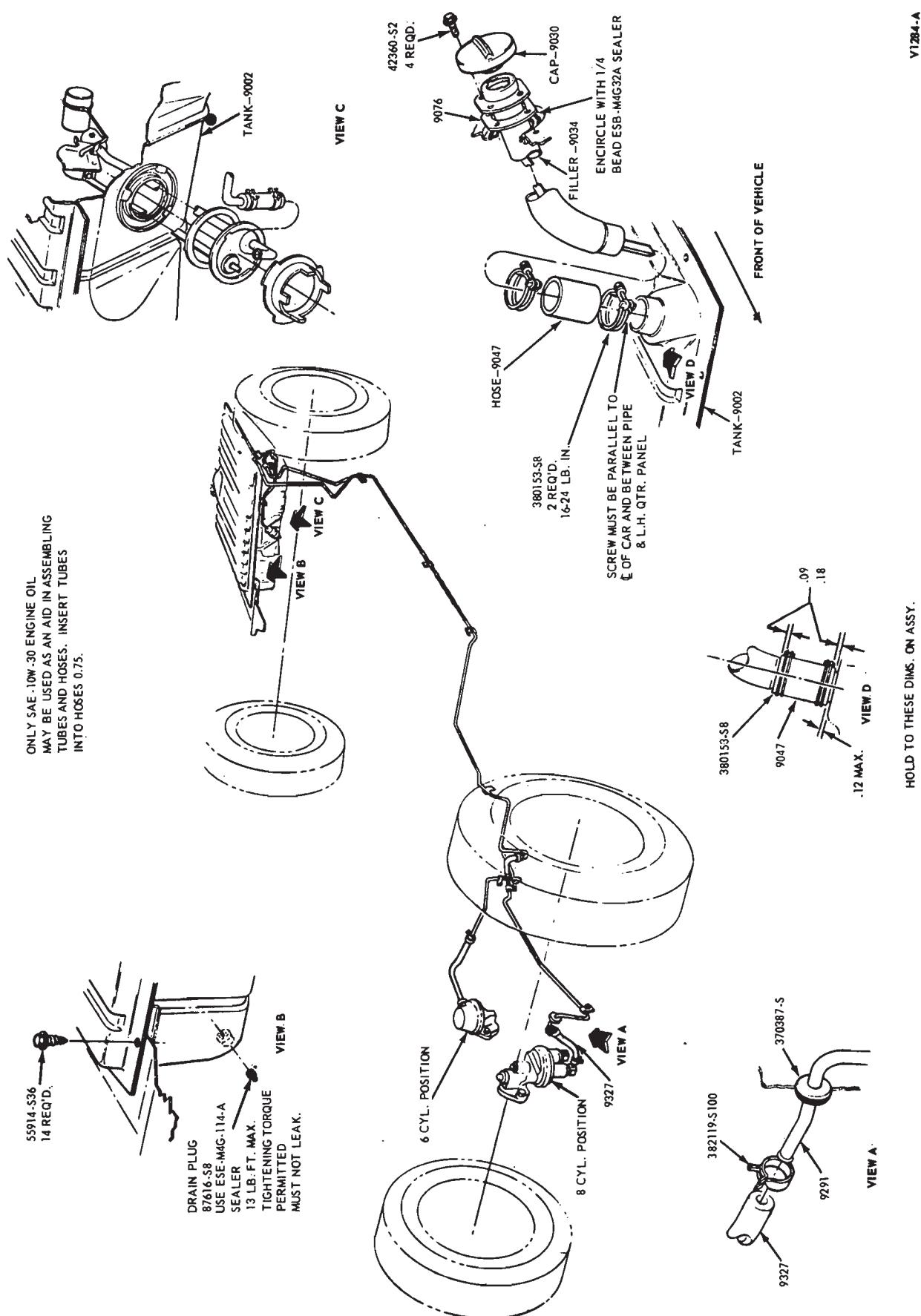


FIG. 2—Fuel System—Falcon Sedans (Except Station Wagon Models)

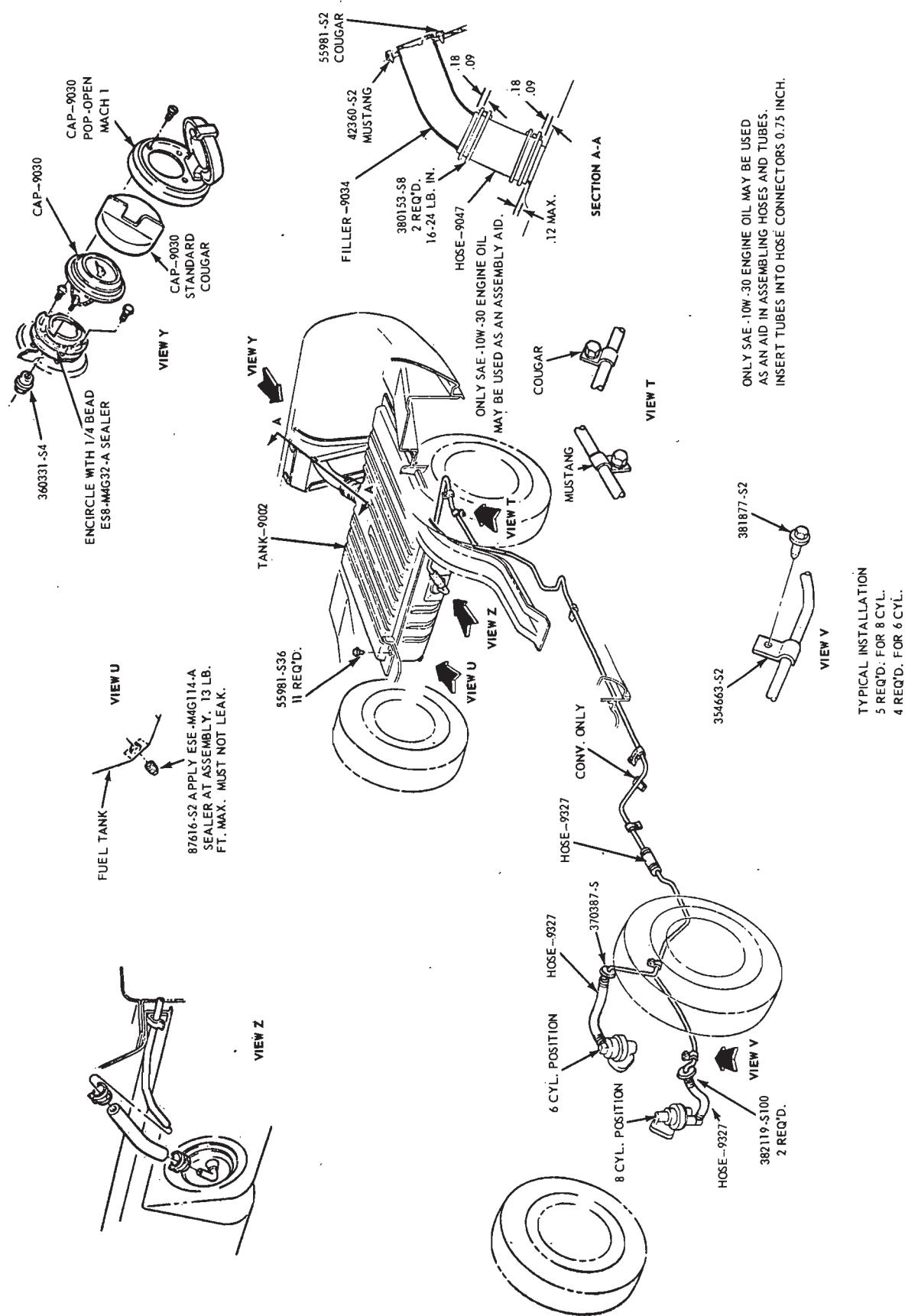


FIG. 3—Fuel System—Mustang and Cougar

V12B-A

B2678-D

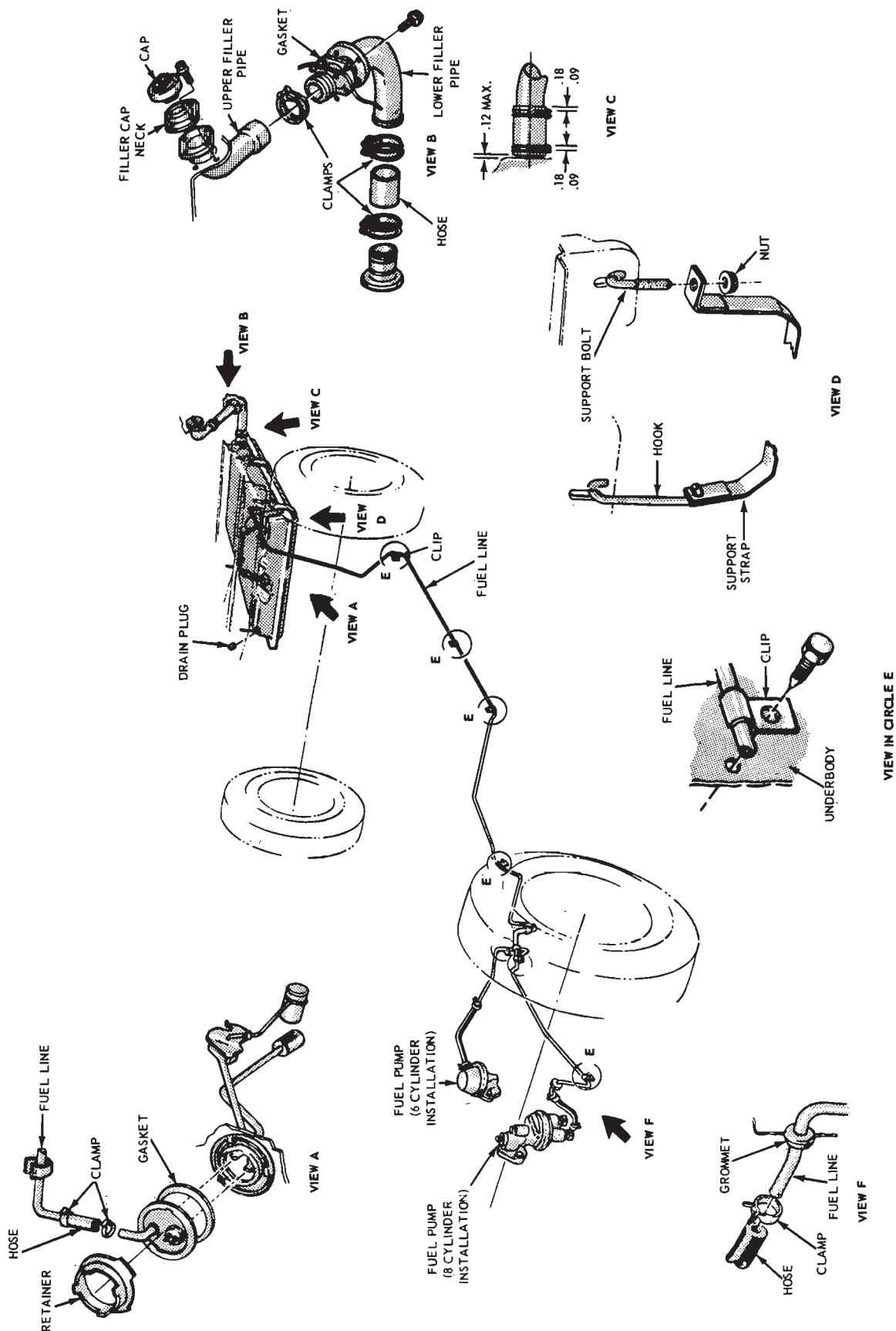


FIG. 4—Fuel System—Falcon Station Wagon Models

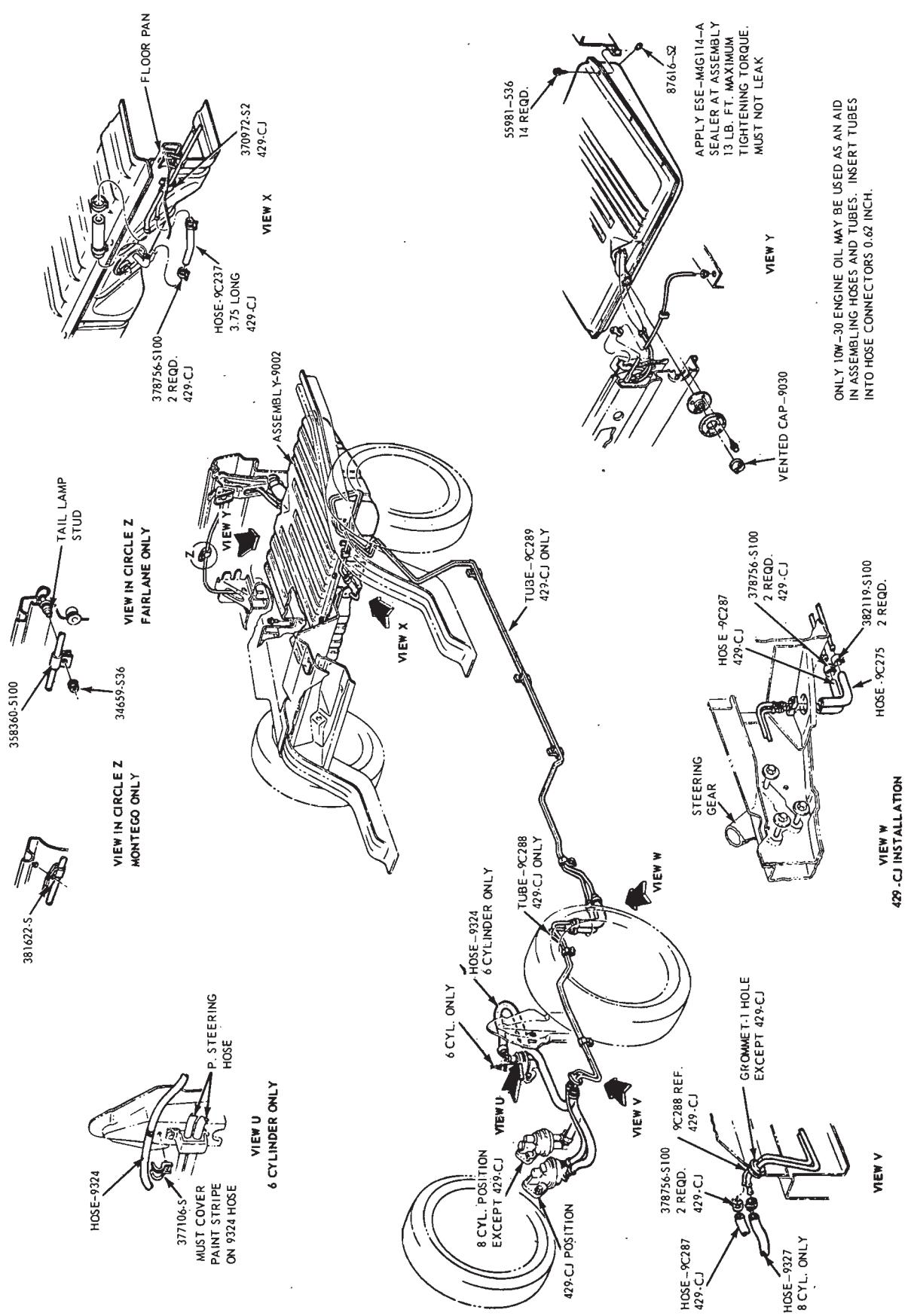
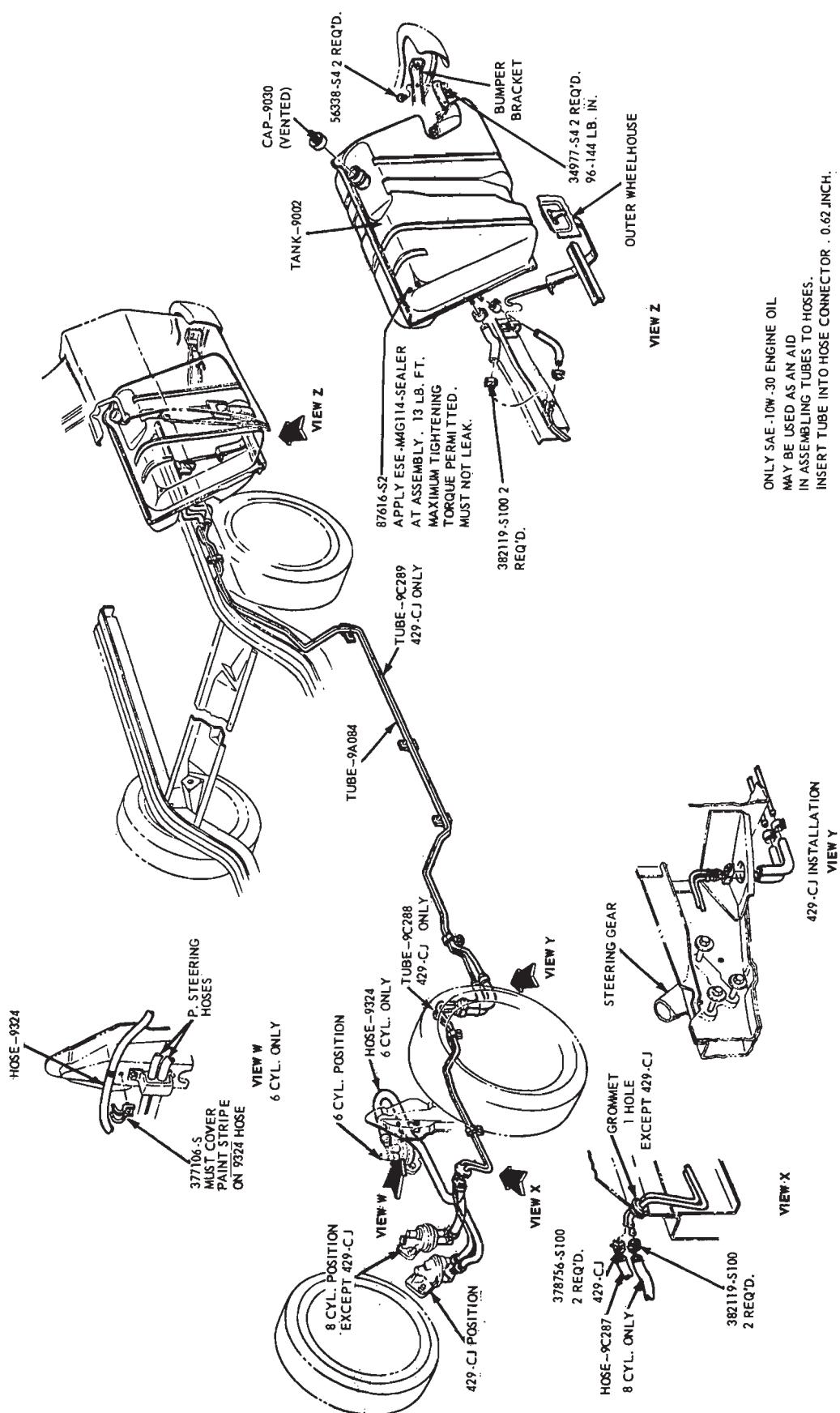


FIG. 5—Fuel System—Fairlane and Montego Sedan



V121-A

FIG. 6—Fuel System—Fairlane and Montego Station Wagon Models

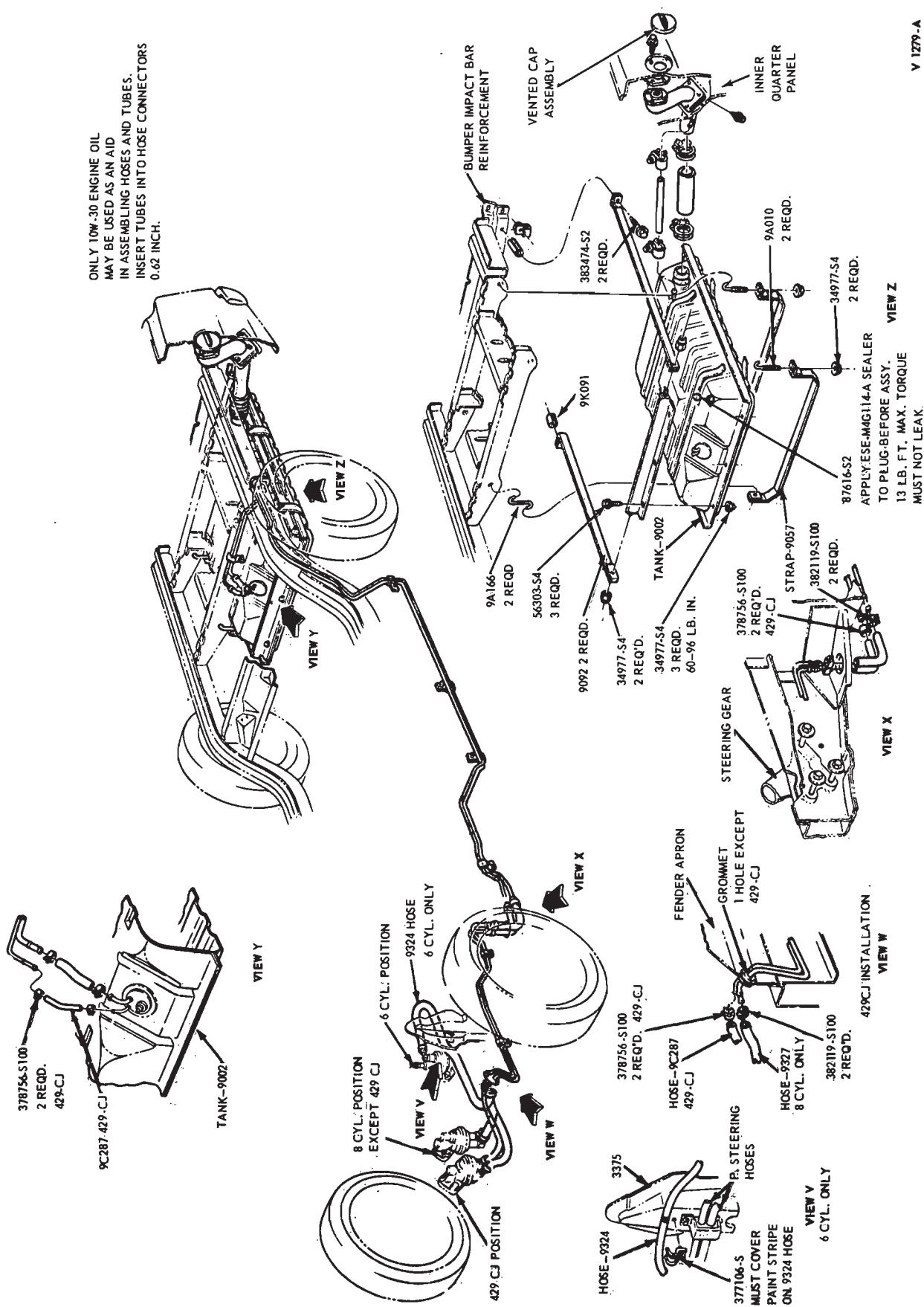


FIG. 7.—Fuel System—Fairlane Ranchero

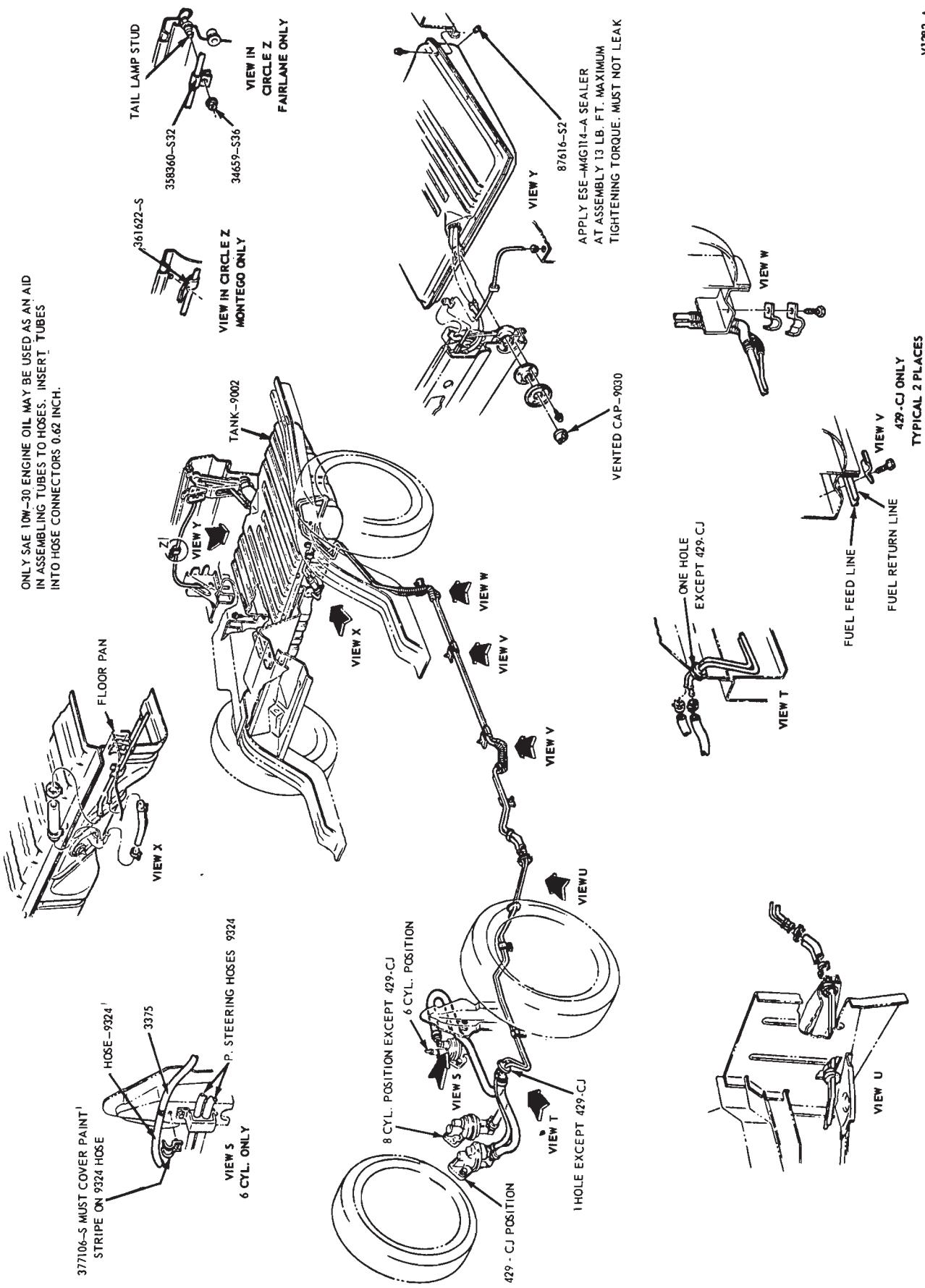


FIG. 8—Fuel System—Fairlane and Montego Convertible

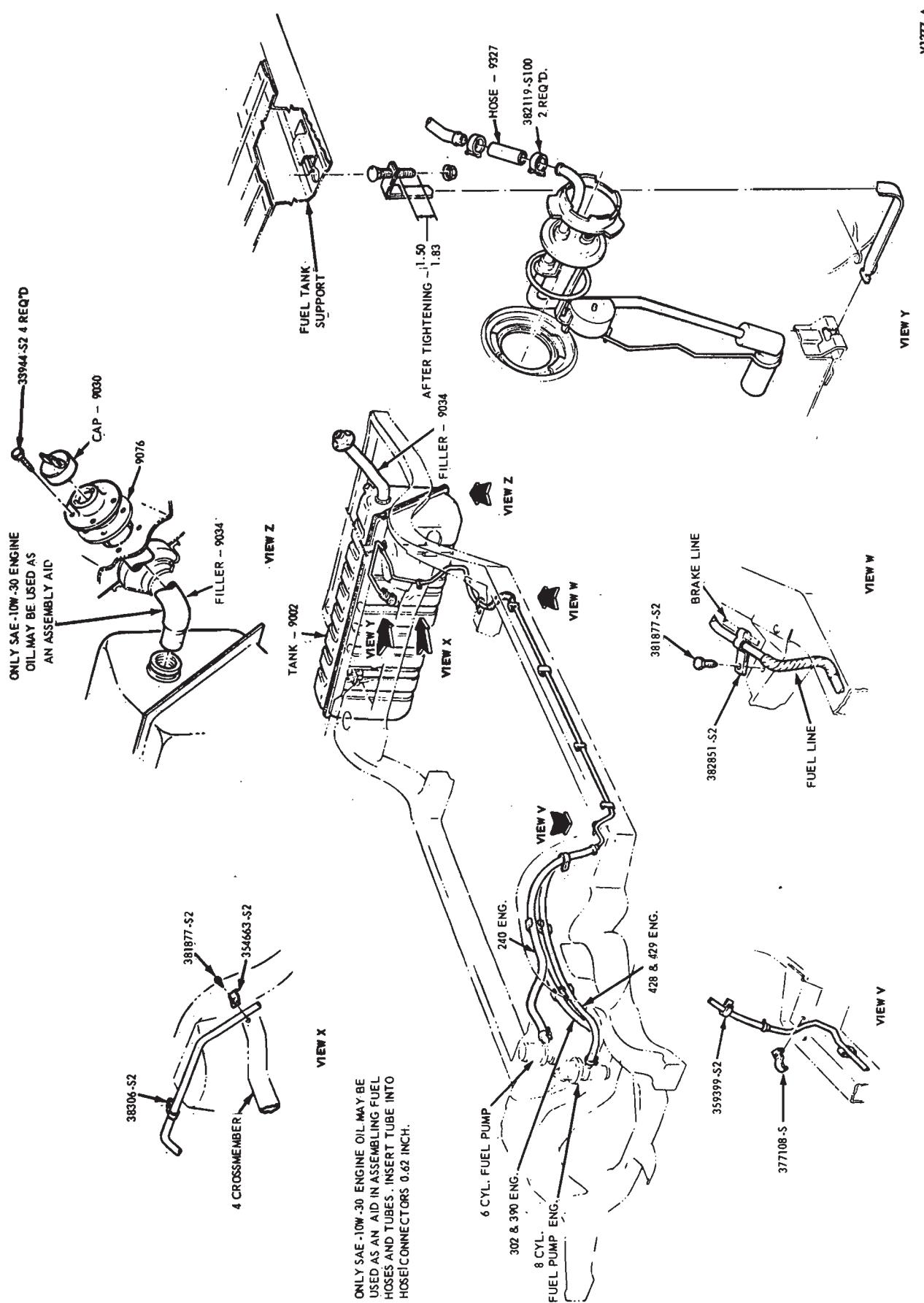


FIG. 9—Fuel System—Ford, Mercury and Meteor (Except Station Wagons)

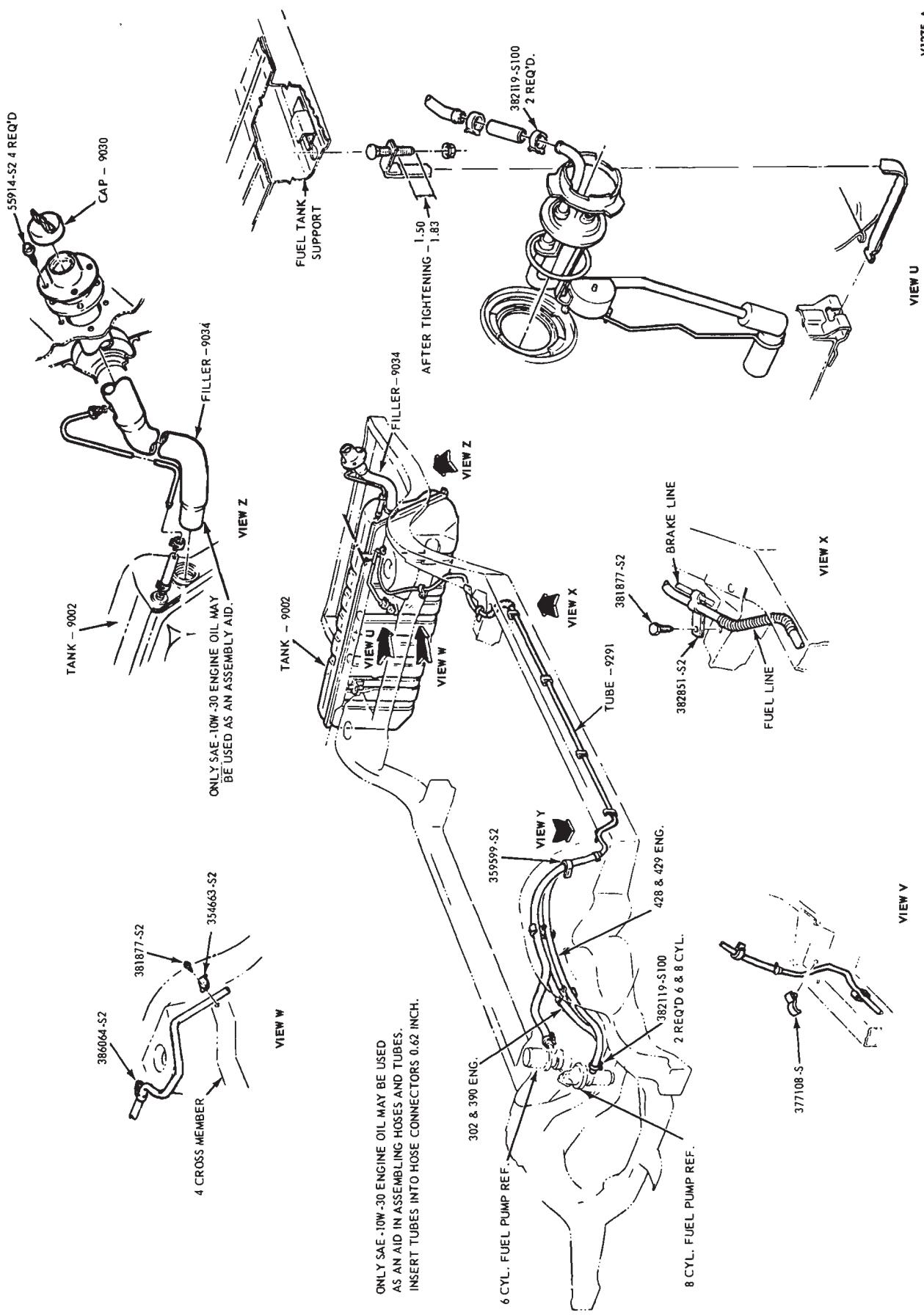


FIG. 10—Fuel System—Ford, Mercury and Meteor Station Wagons

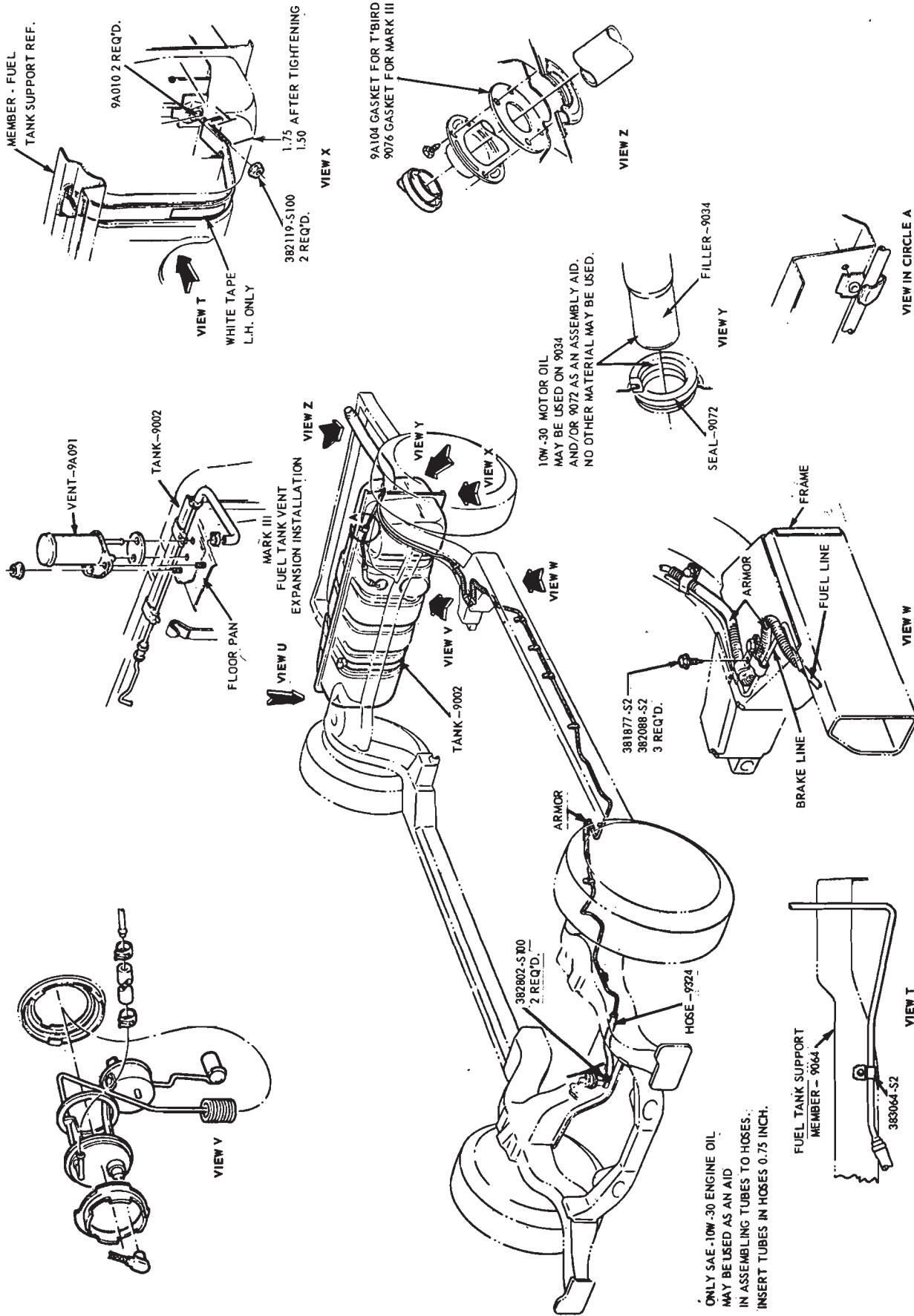
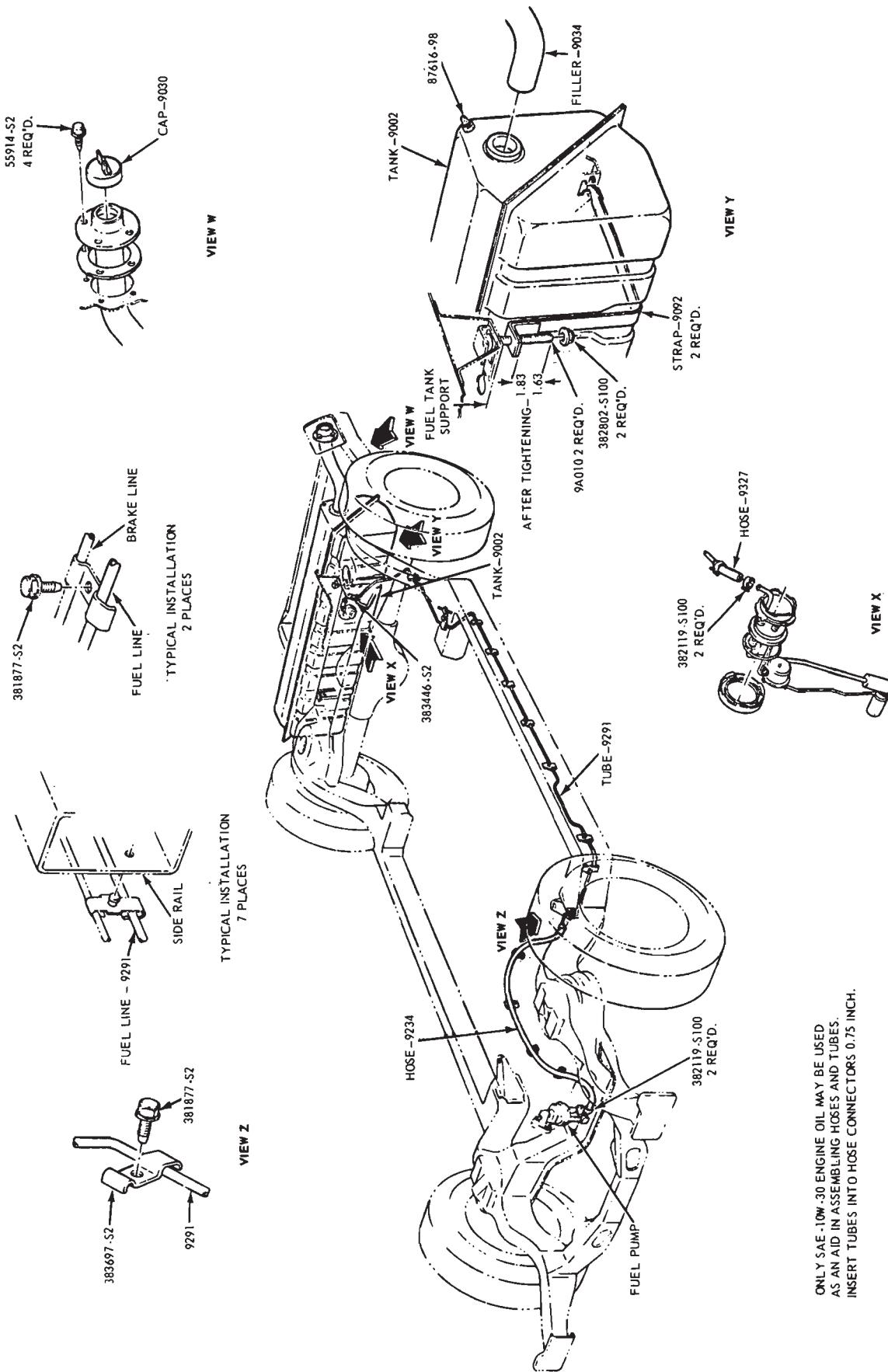


FIG. 11—Fuel System—Thunderbird and Continental Mark III



ONLY SAE -10W-30 ENGINE OIL MAY BE USED AS AN AID IN ASSEMBLING HOSES AND TUBES. INSERT TUBES INTO HOSE CONNECTORS 0.75 INCH.

FIG. 12—Fuel System—Lincoln Continental

1 REMOVAL AND INSTALLATION

FILLER PIPE

FAIRLANE AND MONTEGO CONVERTIBLES, SEDANS AND STATION WAGONS

The fuel tank filler pipe is a part of the fuel tank on these models and cannot be replaced separately.

FALCON SEDANS, COUGAR, MAVERICK AND MUSTANG

Removal

1. Drain the fuel tank with a siphon to a level below the filler pipe opening in the tank. The fuel should be drained into a suitable clean container.

2. Remove the retaining screws securing the filler pipe to the body panel.

3. Loosen the hose clamp and loosen the hose from the filler pipe.

4. Rotate the filler pipe and pull it outward to remove it from the fuel tank.

Installation

1. If necessary install new hose clamps on the filler pipe hose.

2. Place the gasket on the filler pipe.

3. Position the filler pipe in the body panel and slide the hose onto the filler pipe.

4. Install and tighten the filler pipe retaining screws.

5. Tighten the hose clamp and install the siphoned gas back in the fuel tank.

FALCON STATION WAGON

Removal

1. Drain the fuel tank with a siphon to a level below the filler pipe opening in the fuel tank. The fuel should be drained into a suitable clean container.

2. Working from inside the rear quarter panel, loosen the hose clamp(s).

3. Working from underneath the vehicle, loosen the hose clamps and remove the retaining screws securing the lower filler pipe to the body.

4. Remove the retaining screws securing the upper filler pipe to the body panel.

5. Pull the lower filler pipe down and remove it from the vehicle.

6. Pull the upper filler pipe out through the body panel. The end of the upper filler pipe will have to be folded over for removal through the body panel.

Installation

1. If necessary, install new hose clamps on the filler pipe hose(s).

2. Place the gasket on the lower filler pipe and slide it into the body panel and hose from the fuel tank. Install the retaining screws and tighten the hose clamps.

3. Fold over the end of the upper filler pipe and slide it through the body side panel and over the lower filler pipe. Install the filler pipe neck retaining screws and tighten the hose clamp.

4. Place the siphoned fuel back in the fuel tank.

FORD, LINCOLN CONTINENTAL, MERCURY AND METEOR

Removal

1. Partially drain the fuel tank with a siphon to a level below the filler pipe connection in the tank.

2. Remove the four retaining screws securing the filler pipe to the filler pipe housing.

3. Raise the vehicle on a hoist.

4. Grasp the filler pipe near the fuel tank, rotate the filler pipe and pull it outward to remove it from the fuel tank and filler pipe housing.

5. Remove the grommet seal from the fuel tank opening.

Installation

1. Lubricate the grommet with engine oil and install it in the fuel tank opening.

2. Position the filler pipe in the filler pipe housing and slide the pipe into the fuel tank opening. Be sure that the grommet seal is properly seated.

3. Lower the vehicle.

4. Install and tighten the filler pipe retaining screws.

5. Fill the fuel tank and install the filler cap. Check for fuel leaks.

THUNDERBIRD AND CONTINENTAL MARK III

Removal

1. Partially drain the fuel tank with a siphon to a level below the filler pipe connection in the tank.

2. Remove the four retaining screws securing the filler pipe to the filler pipe housing.

3. Raise the vehicle on a hoist.

4. Grasp the filler pipe near the fuel tank, rotate the filler pipe and pull it outward to remove it from the fuel tank and filler pipe housing.

5. Remove the grommet seal from the fuel tank opening.

Installation

1. Lubricate the grommet with engine oil and install it in the fuel tank opening.

2. Position the filler pipe in the filler pipe housing and slide the pipe into the fuel tank opening. Be sure that the grommet seal is properly seated.

3. Lower the vehicle.

4. Install and tighten the filler pipe retaining screws.

5. Fill the fuel tank and install the filler cap. Check for fuel leaks.

FUEL TANK

MAVERICK, MUSTANG, COUGAR, FALCON, FAIRLANE AND MONTEGO CONVERTIBLES AND SEDANS

Removal

1. Raise the rear of the vehicle and position safety stands.

2. Remove the fuel tank drain plug and drain the fuel into a suitable container.

3. Disconnect the fuel gauge sending unit wire at the sending unit.

4. Loosen the hose clamp, slide the clamp forward and disconnect the fuel line at the fuel gauge sending unit.

5. Disconnect the fuel tank vent hose at the tank, if so equipped.

If the fuel gauge sending unit is to be removed, turn the unit retaining ring counterclockwise and remove the sending unit retaining ring and gasket.

6. Remove the spare tire from the luggage compartment. Pull the com-

partment floor mat out of the way for access to the fuel tank.

7. Remove the fuel tank filler neck retaining screws. On Fairlane and Montego with integral filler neck, remove the filler neck retainer.

8. On Cougar, Maverick and Mustang, loosen the filler neck to tank hose clamps. Remove the filler neck, mounting gasket, and filler neck to tank hose.

9. Remove the fuel tank to luggage compartment floor pan retaining screws and remove the fuel tank.

Installation

1. Make sure all the old sealer has been removed from the fuel tank mounting flange and mounting surface at the luggage compartment floor pan. Apply caulking cord to the fuel tank mounting surface at the luggage compartment floor pan.

2. Position the fuel tank to the luggage compartment floor pan and install the retaining screws.

3. Position the hose and filler neck assembly and gasket to the body back panel. Position the hose to the fuel tank neck.

4. Install the filler neck or retainer to body back panel retaining screws and tighten the hose clamps.

5. If the fuel gauge sending unit was removed, make sure all the old O-ring material has been removed from the unit mounting surface on the fuel tank. Using a new gasket, position the fuel gauge to the fuel tank and secure with the retaining ring.

6. Position the luggage compartment floor mat and install the spare tire.

7. Connect the fuel gauge sending unit wire to the sending unit.

8. Connect the fuel line at the fuel gauge sending unit and tighten the hose clamps securely. Install the drain plug.

9. Connect the fuel tank vent hose, if so equipped.

10. Remove the safety stands and lower the vehicle.

11. Fill the tank and check all connections for leaks.

FALCON STATION WAGON

Removal

1. Siphon the fuel from the fuel tank into a suitable container.

2. Loosen the filler hose clamp at the tank and disconnect the hose.

3. Disconnect the fuel gauge sending unit wire at the sending unit.

4. Loosen the clamps and disconnect the flexible fuel line at the sending unit.

5. Remove the two nuts retaining the fuel tank support straps to the underbody. Remove the straps and lower the tank.

6. Remove the fuel gauge sending unit.

Installation

1. Using a new O-ring, install the fuel gauge sending unit.

2. Hold the tank in position against the underbody. Hook the support straps to the retainers in the underbody. Position the straps over the studs, then install the nuts retaining the straps to the underbody.

3. Connect the fuel line and filler hose.

4. Connect the fuel gauge sending unit wire.

5. Fill the tank and check all connections for leaks.

FAIRLANE AND MONTEGO STATION WAGONS

Removal

1. Remove the filler cap. Using necessary precautions, siphon the fuel into a suitable clean container.

2. Raise the vehicle on a hoist.

3. Remove the left rear wheel assembly.

4. Remove the wheel well splash shield.

5. Disconnect the fuel gauge sending unit wire and fuel line at the sending unit.

6. Remove the nut retaining the tank support strap to the body. Remove the strap and remove the tank.

7. Remove the sending unit from the old tank if a new tank is to be installed.

Installation

1. If a new tank is to be installed, install the fuel gauge sending unit and a new mounting gasket in the fuel tank.

2. Hold the tank in position and install the retaining strap.

3. Connect the fuel line and sending unit wire to the sending unit.

4. Install the wheel well splash shield.

5. Install the left rear wheel and lower the vehicle.

6. Fill the fuel tank and install the filler cap.

7. Check all connections for leaks.

FORD, LINCOLN CONTINENTAL, MERCURY AND METEOR

Removal

1. Remove the filler cap. Using necessary precautions, drain the fuel into a suitable container.

2. Remove the four filler pipe to fender screws.

3. Raise the vehicle on a hoist.

4. Remove the filler pipe.

5. Disconnect the fuel gauge sending unit wire and fuel line at the sending unit.

6. Remove the two nuts retaining the tank support straps to the body floor pan at the rear of the tank. Remove the straps and lower the tank.

7. Remove the sending unit from the old tank if a new tank is to be installed.

Installation

1. If a new tank is to be installed, install the fuel gauge sending unit and a new mounting gasket in the tank.

2. Hold the tank in position against the body floor pan. Hook the support straps to the retainers in the floor pan at the front of the tank. Position the straps over the bolts, then install the nuts retaining the straps to the body floor pan at the rear of the tank.

3. Connect the fuel line and sending unit wire to the sending unit.

4. Lubricate a new grommet seal with engine oil and place it in position in the fuel tank opening.

5. Install the filler pipe in the fuel tank. Be sure the grommet seal is properly seated.

6. Lower the vehicle.

7. Install the four filler pipe retaining screws.

8. Fill the tank and check all connections for leaks.

THUNDERBIRD AND CONTINENTAL MARK III

Removal

1. Remove the filler cap. Using necessary precautions, drain the fuel into a suitable container.

2. Remove the four filler pipe-to-filler pipe housing screws.

3. Raise the vehicle on a hoist.

4. Remove the filler pipe.

5. Disconnect the tube from the fuel vent tank to the fuel tank (Contin-

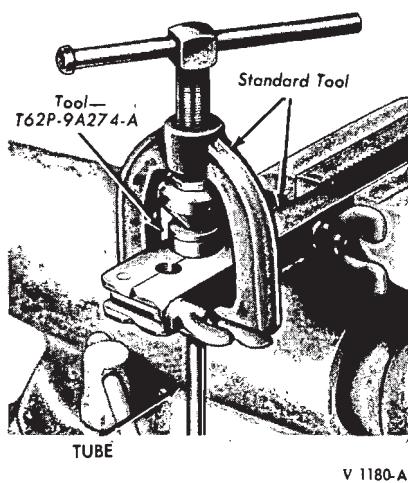


FIG. 13—Fuel Line Tube Die

nental Mark III only).

6. Disconnect the fuel gauge sending unit wire and fuel line at the sending unit.

7. Remove the two nuts retaining the tank support straps to the body floor pan at the rear of the tank. Remove the straps and lower the tank.

8. Remove the sending unit from the tank if a new tank is to be installed. If the vent tube is damaged beyond repair or leaking fuel at the soldered connection on the fuel tank, the tube must be soldered or replaced. To prevent combustion during soldering operations, completely drain the fuel from the tank; then steam clean the tank and dry it with compressed air. Make sure the vent tube is open after repair.

Installation

1. If a new tank is to be installed,

install the fuel gauge sending unit and a new mounting gasket in the tank.

2. Hold the tank in position against the body floor pan. Hook the support straps to the retainers in the floor pan at the front of the tank. Position the straps over the bolts, then install the nuts retaining the straps to the body floor pan at the rear of the tank.

3. Connect the tube from the fuel vent tank (Continental Mark III only).

4. Connect the fuel line and sending unit wire to the sending unit.

5. Lubricate a new grommet seal with engine oil and place it in position in the fuel tank opening.

6. Install the filler pipe in the fuel tank. Be sure the grommet seal is properly seated.

7. Lower the vehicle.

8. Install the four filler pipe retaining screws.

9. Fill the tank and check all connections for leaks.

FUEL LINES

REPAIR

The various fuel lines are not serviced as assemblies. They must be cut, squared and formed out of rolls of fuel system service tubing and hose material available at dealerships.

A damaged section of tubing longer than 12 inches can be cut out of the existing line and replaced by a comparable service tubing section, spliced into the line by means of connecting hoses and retaining clamps.

A damaged section of tubing shorter than 12 inches can be cut out of

the line and replaced by a length of service hose and two retaining clamps. All replacement hoses must be cut to a length that will insure proper clamp retention beyond the flared ends of the connecting tubing.

REMOVAL

1. Drain the fuel from the tank.

2. Disconnect the line at the fuel gauge sender unit and the fuel pump. Remove the lines from the holding clips along the underbody. Remove all damaged hose sections and tube sections.

INSTALLATION

1. Cut a new section of tubing to approximately the same length as the section to be replaced. Allow extra length for flaring the ends of the tubing. Square the ends of the cut tubing with a file.

2. Ream the inside edges of the cut tubing with the reamer blade on the tube cutter. Be sure metal chips are removed from inside the tube(s). Flare the ends of the cut tubing, as required, with a standard tube flaring kit and tool (Fig. 13).

3. Bend the tube section to conform to the contour of the original tube. Cut an ample-length of hose to form a coupling between the flared ends of the fuel lines. Connect the hose couplings to the tubing and install the retaining clamps.

4. Position the lines in the underbody clips and tighten the clips. Connect the line to the fuel gauge sender unit and the fuel pump. Fill the tank and check for leaks.

2 SPECIFICATIONS

FUEL TANK CAPACITIES

Car Model	Without Evaporative Emission Control		With Evaporative Emission Control	
	Gallons		Gallons	
	U.S. Measure	Imperial Measure	U.S. Measure	Imperial Measure
Ford and Mercury except Station Wagons	24.5	20.2	23.1	19.1
Ford and Mercury Station Wagons	22.2	18.5	21.1	17.5
Montego except Station Wagons	22	18.3	20	16.6
Montego Station Wagon	19	15.9	17	14.1
Falcon-except Station Wagon	16	13.4	12.5	10.3
Falcon Station Wagon	19	15.9	N.A.	N.A.
Fairlane	22	18.3	20	16.6
Fairlane Station Wagon	19	15.9	17	14.1
Cougar	22	18.3	20	16.6
Maverick	16	13.4	14	11.6
Mustang	22	18.3	20	16.6
Ranchero	20	16.6	18	15
Thunderbird	24.1	20	22.5	18.7
Mark III	24.1	20	22.5	18.7
Lincoln Continental	24.5	20.2	23.1	19.1

CV1026-B

PART 23-11 Fuel Evaporative Emission Control System

APPLIES ONLY TO VEHICLES BUILT FOR SALE IN CALIFORNIA

COMPONENT INDEX	PAGE	COMPONENT INDEX	PAGE
Assembly and Disassembly	11-01	Removal and Installation	11-01
Description	11-01	Testing	11-01
Fuel Tank	11-01		

SYSTEM COMPONENTS

DESCRIPTION

This system is installed on vehicles that are to be offered for sale in California. The system minimizes the possibility of raw gasoline vapors being released to the atmosphere. This requires the following new parts:

- Non-Vented Fill Cap
- Fill Vent (Located Inside Fuel Tank)
- Vapor Vent (Located Inside Fuel Tank)
- Fuel Tank Vent Connector Assembly
- Fuel Tank Vent Expansion Tank (Vapor Separator)
- Three-Way Vent Valve
- Carbon Canister

Fill Vent

The fuel tank has an extended fill neck with a centrally-located fill vent and a non-vented cap. This provides a space for fuel expansion when the gauge indicates full.

Vapor Vent

Pickup tubes in the corners of the tank provide venting action, regardless of the slant of the vehicle. These tubes are connected to a manifold which in turn is connected to the fuel tank vent expansion tank by means of a fuel tank vent connector assembly.

Fuel Tank Vent Connector Assembly

Designs for this unit vary on the different models, but basically it is a vapor-tight connector for coupling the fuel tank vents to the expansion tank.

Fuel Tank Vent Expansion Tank (Vapor Separator)

This tank is installed at a higher level in the vehicle than the main fuel tank, thus allowing the fuel vapor to separate from any liquid fuel rising in the vents. A line is connected to this tank, carrying fuel vapor forward to the three-way control valve.

Three-Way Control Valve

This valve controls the expansion space in the main fuel tank. By opening to the atmosphere when necessary, it also prevents a vacuum or pressure build-up which might damage the main fuel tank. Fuel vapor flows forward from this valve to the carbon canister.

Carbon Canister

This device is connected to the air cleaner and the fuel tank vent line. It acts as a storage for fuel vapors until it can be drawn into the engine and burned. On vehicles not equipped with the carbon canister, fuel vapor is discharged into the engine valve cover through the PCV valve.

TESTING

Diagnosis of system troubles is limited to locating leaks, pinched or kinked lines or inoperative 3-way control valve. Indication of system trouble would be restricted fuel flow or a deformed main fuel tank.

REMOVAL AND INSTALLATION

With the exception of the fuel tank inner vent assembly, which is part of the fuel tank, all component parts of the system are serviced by simple

FUEL TANK VENT TUBES

	Metal	Plastic
Cougar		X
Fairlane		X
Falcon	X	
Ford	X	
Lincoln	X	
Mark III	X	
Maverick		X
Mercury	X	
Montego		X
Mustang		X
Thunderbird	X	

CV1002-A

FIG. 1—Fuel Tank Vent Tube Material

bolt, nut or screw part removal and installation. Each component is independent of the others and may be separately replaced. Disconnect points for the various components are shown in Figs. 2 through 10.

ASSEMBLY AND DISASSEMBLY

Component parts of the system are not repairable and when damaged or inoperative should be replaced with new parts.

FUEL TANK

Fuel tanks equipped with metal vent tubes and interior parts (Fig. 1) can be steam-cleaned and repaired like any fuel tank. When steam-cleaning this type tank, also steam-clean the vent tubes as a safety measure.

Fuel tanks equipped with plastic vent tubes (Fig. 1) can be cleaned with a cold flushing system if contam-

inated. But cannot be steam-cleaned, soldered or welded, since heat will damage the plastic parts. If the vent

system is damaged, the tank must be replaced.

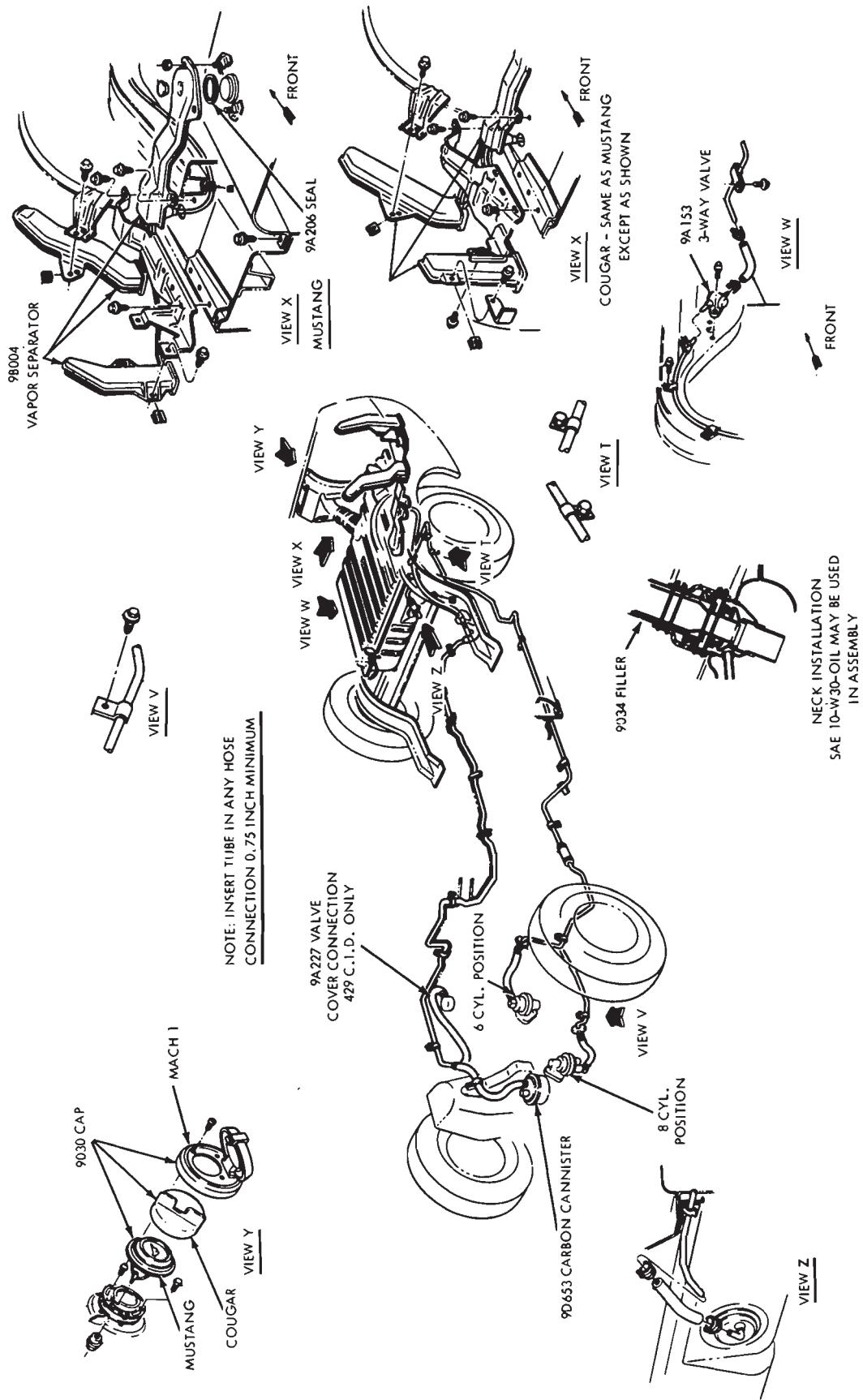


FIG. 2—Fuel Evaporative Emission Control System—Mustang and Cougar

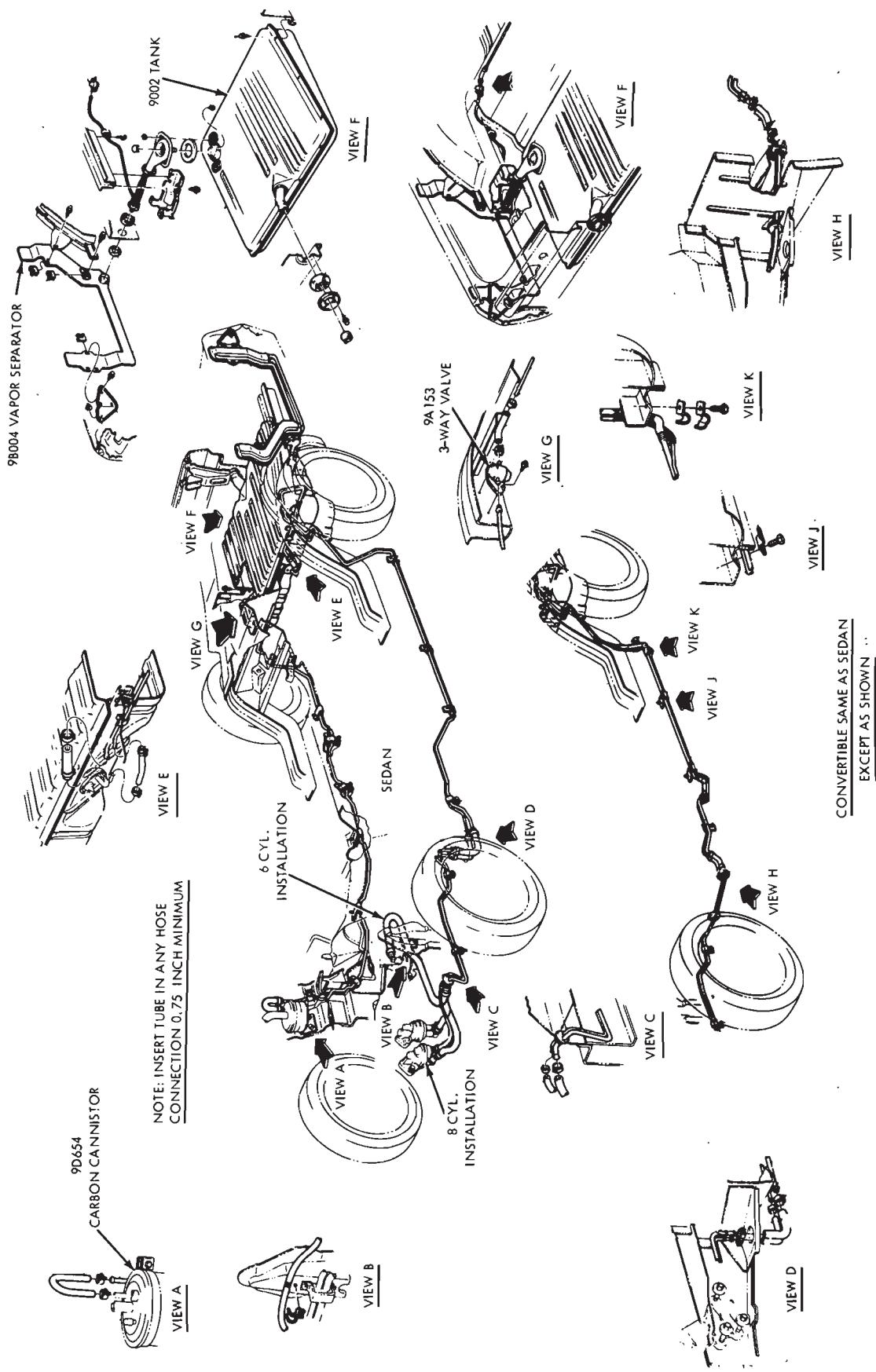


FIG. 3—Fuel Evaporative Emission Control System—Fairlane and Montego Sedan and Convertible

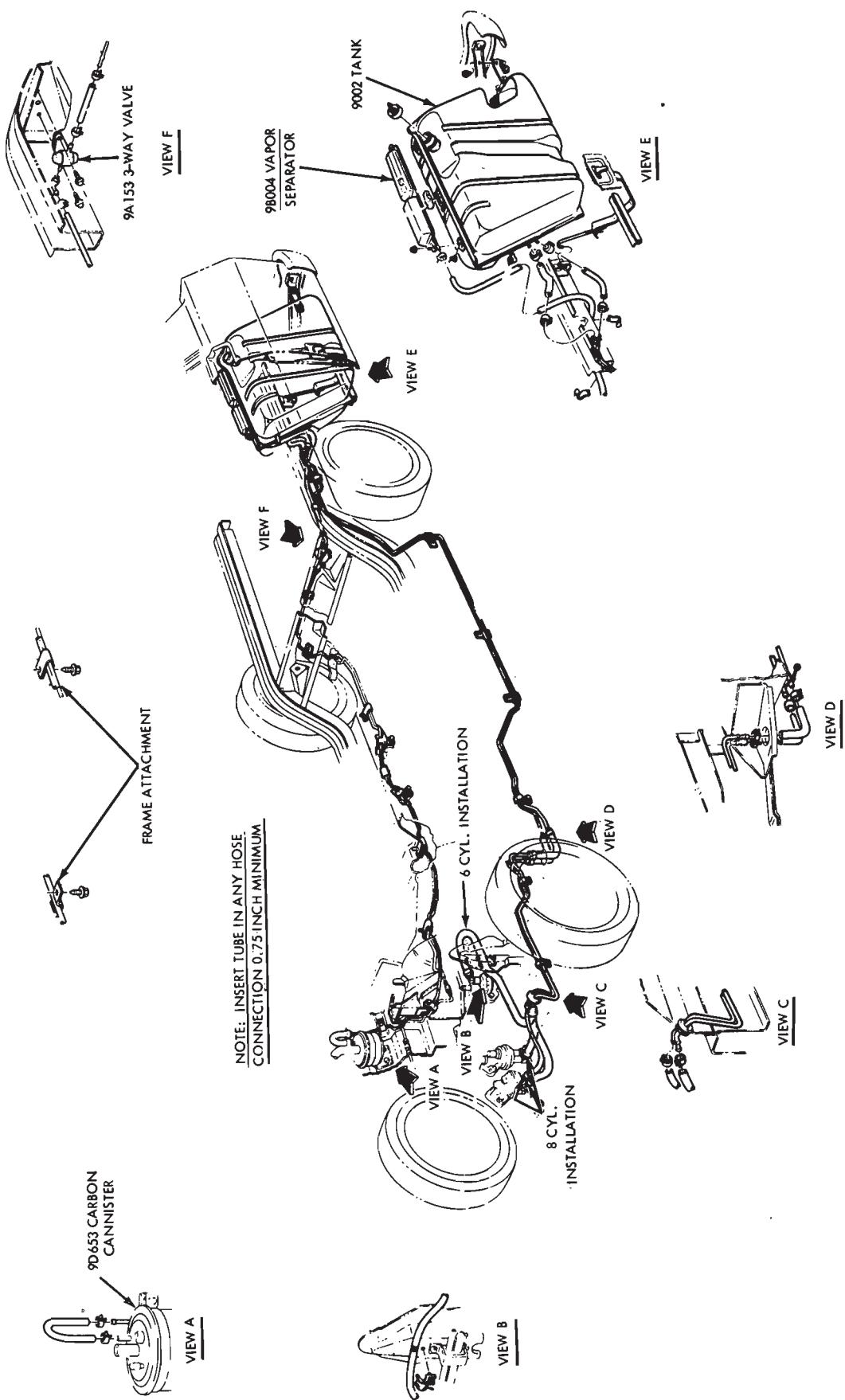


FIG. 4—Fuel Evaporative Emission Control System—Fairlane and Montego Station Wagon

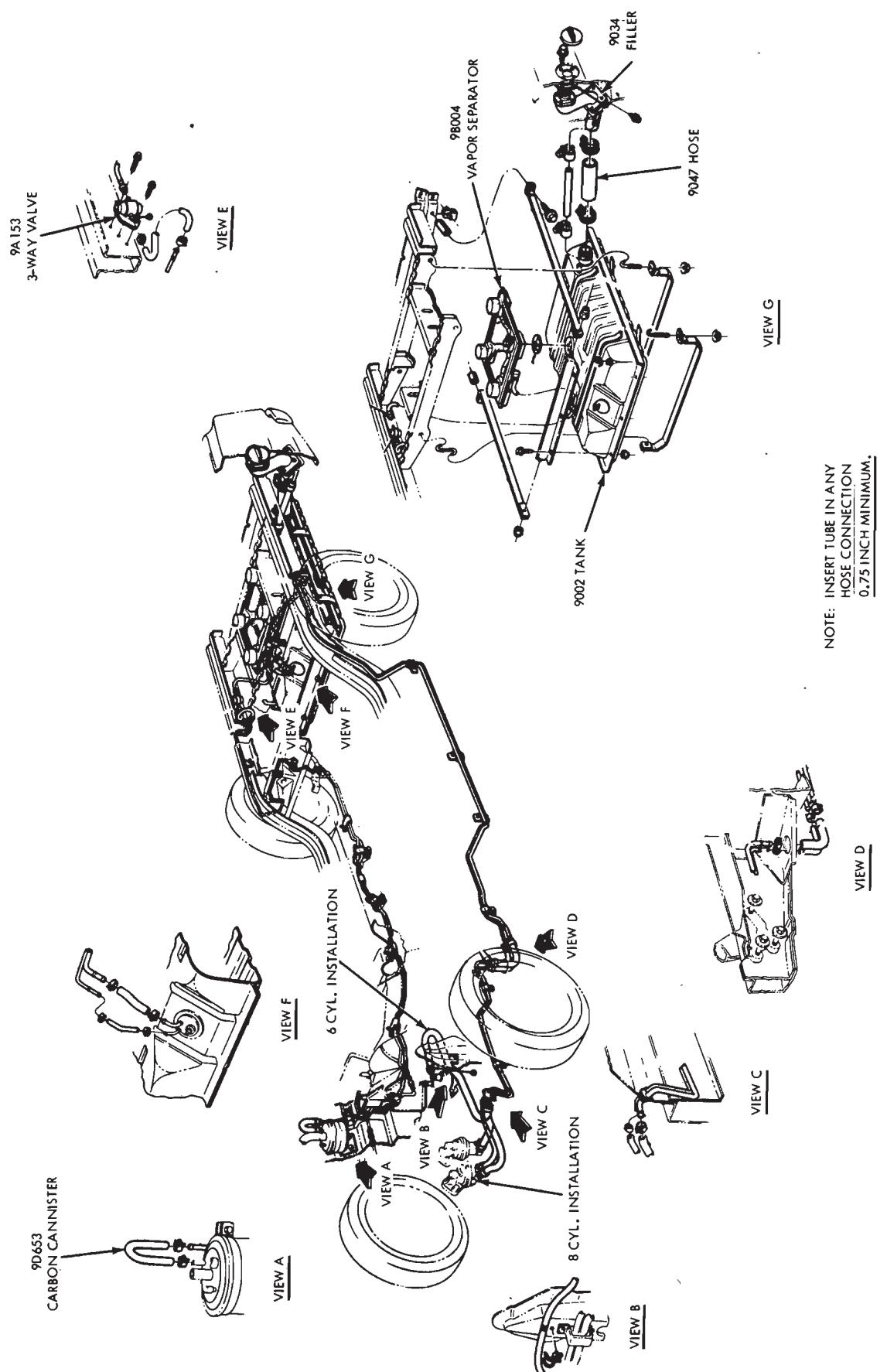


FIG. 5—Fuel Evaporative Emission Control System—Fairlane Ranchero

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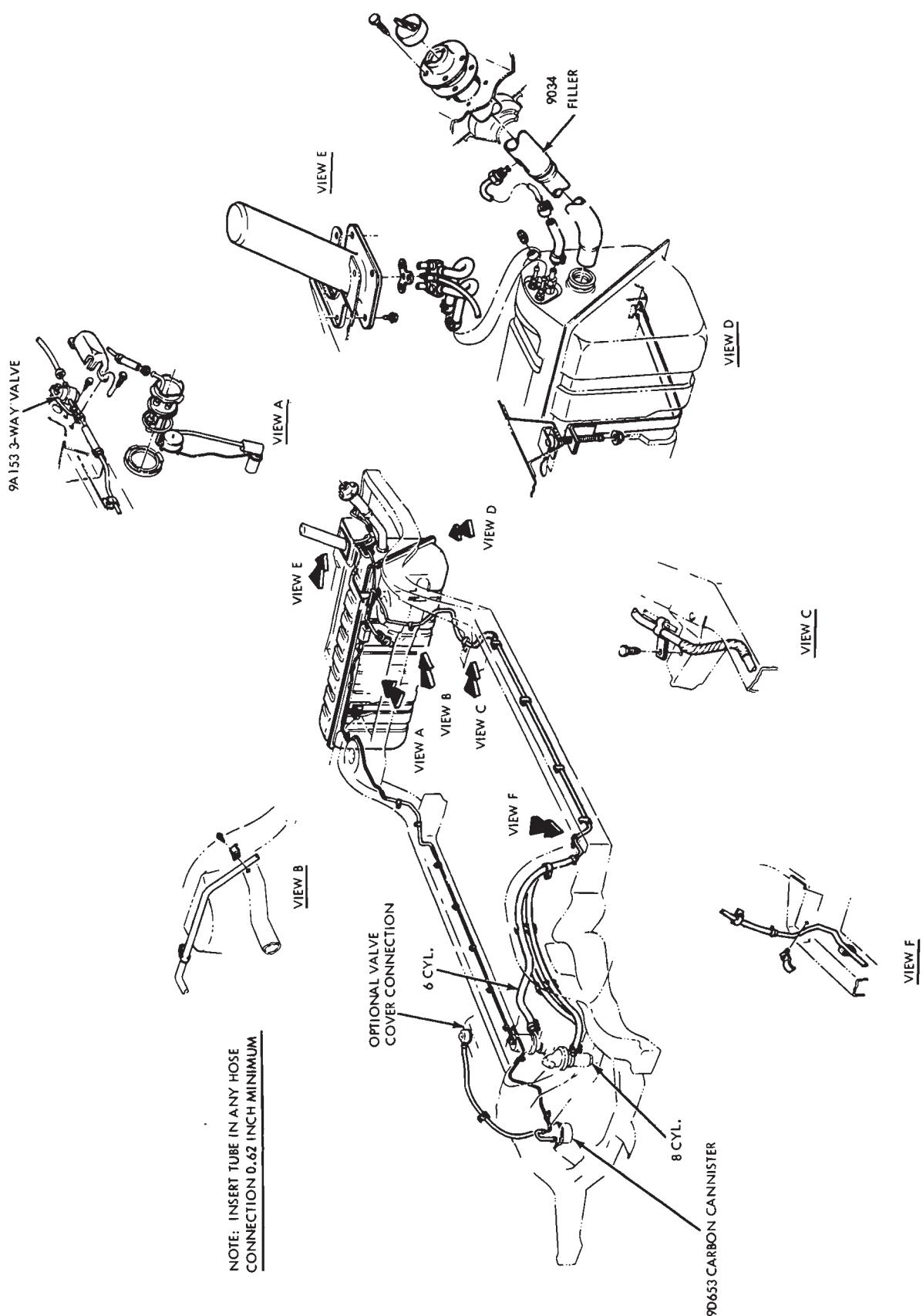


FIG. 6—Fuel Evaporative Emission Control System—Ford and Mercury Sedan and Convertible

V1263-B

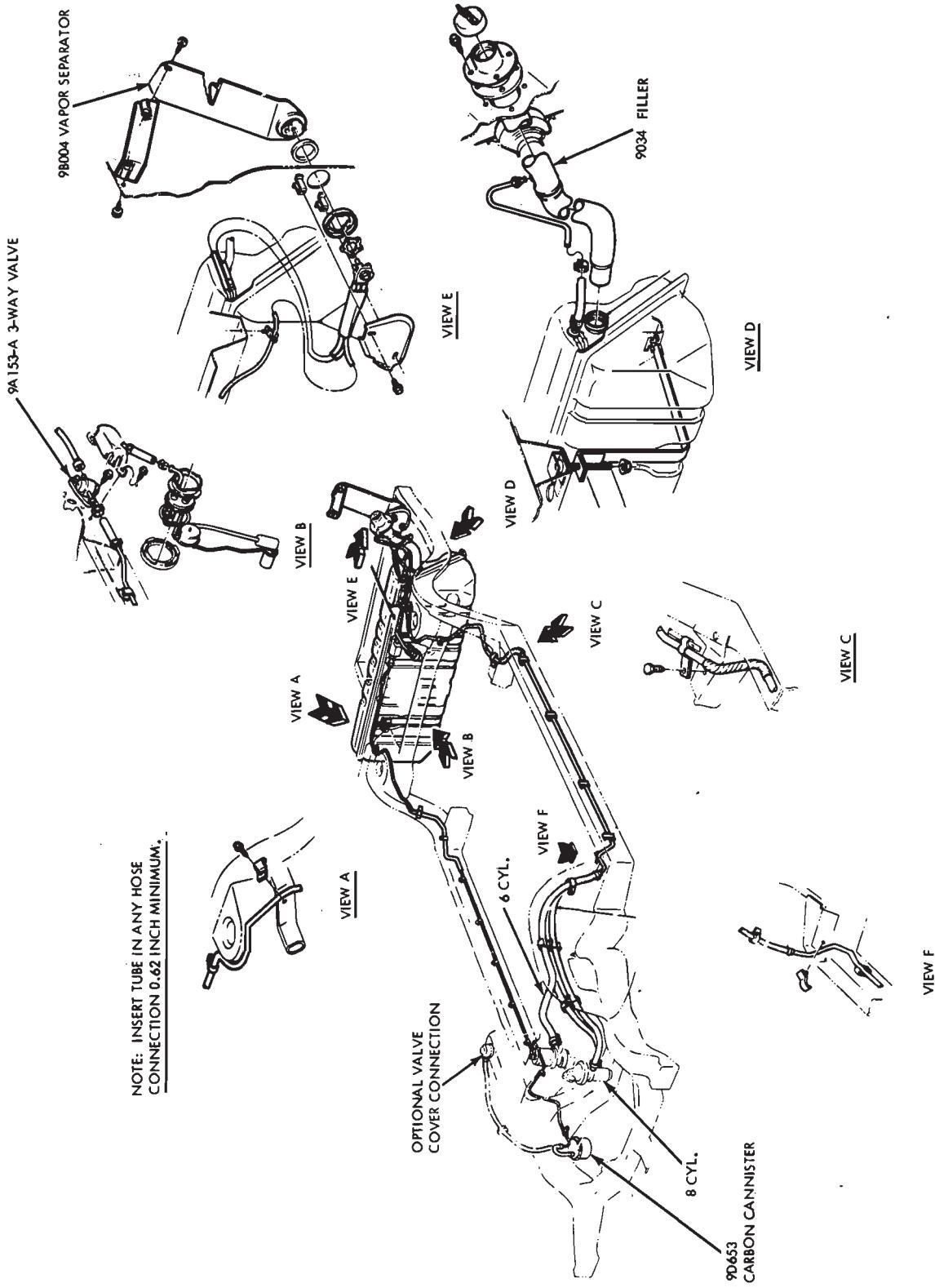


FIG. 7—Fuel Evaporative Emission Control System—Ford and Mercury Station Wagon

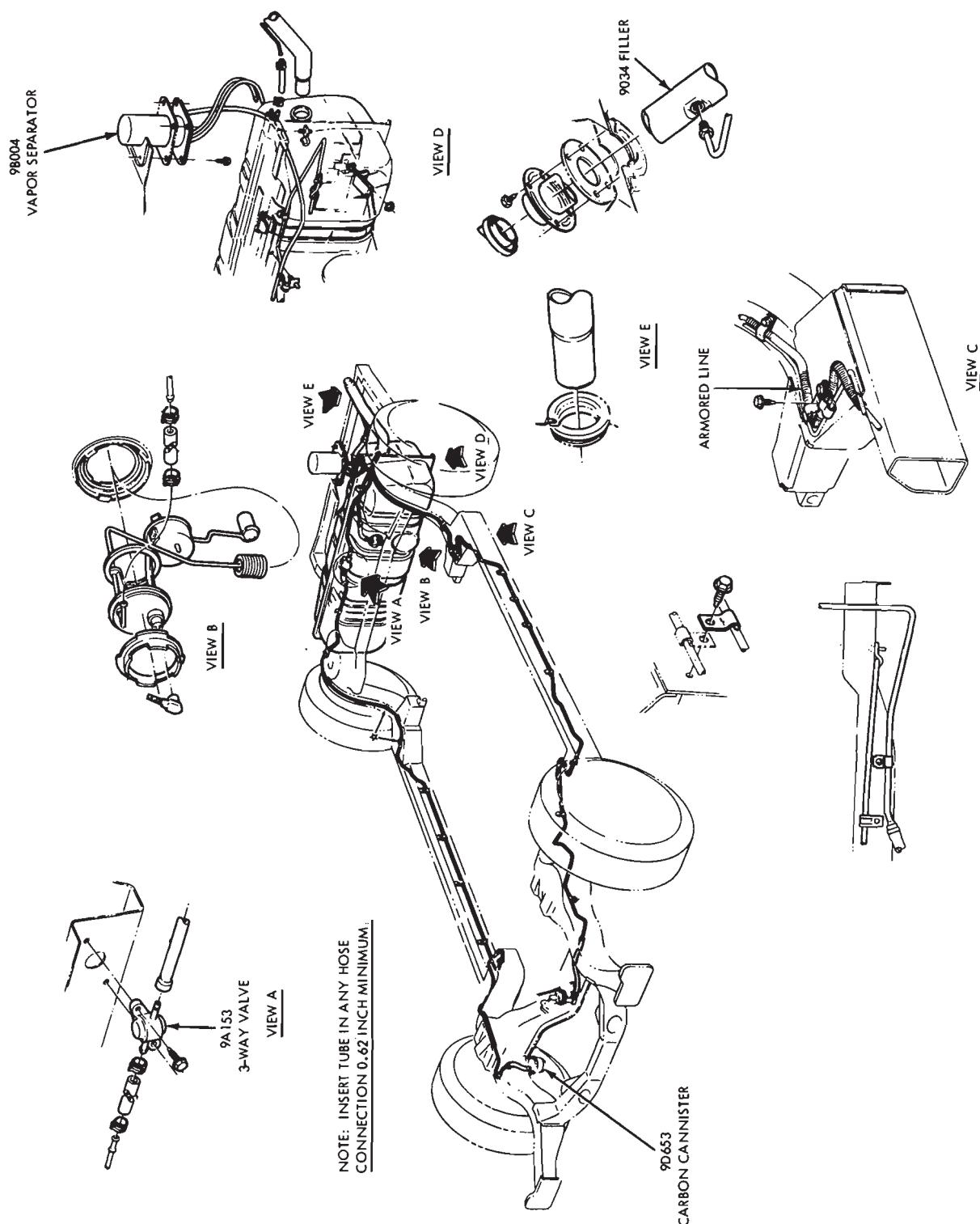


FIG. 8—Fuel Evaporative Emission Control System—Thunderbird and Mark III

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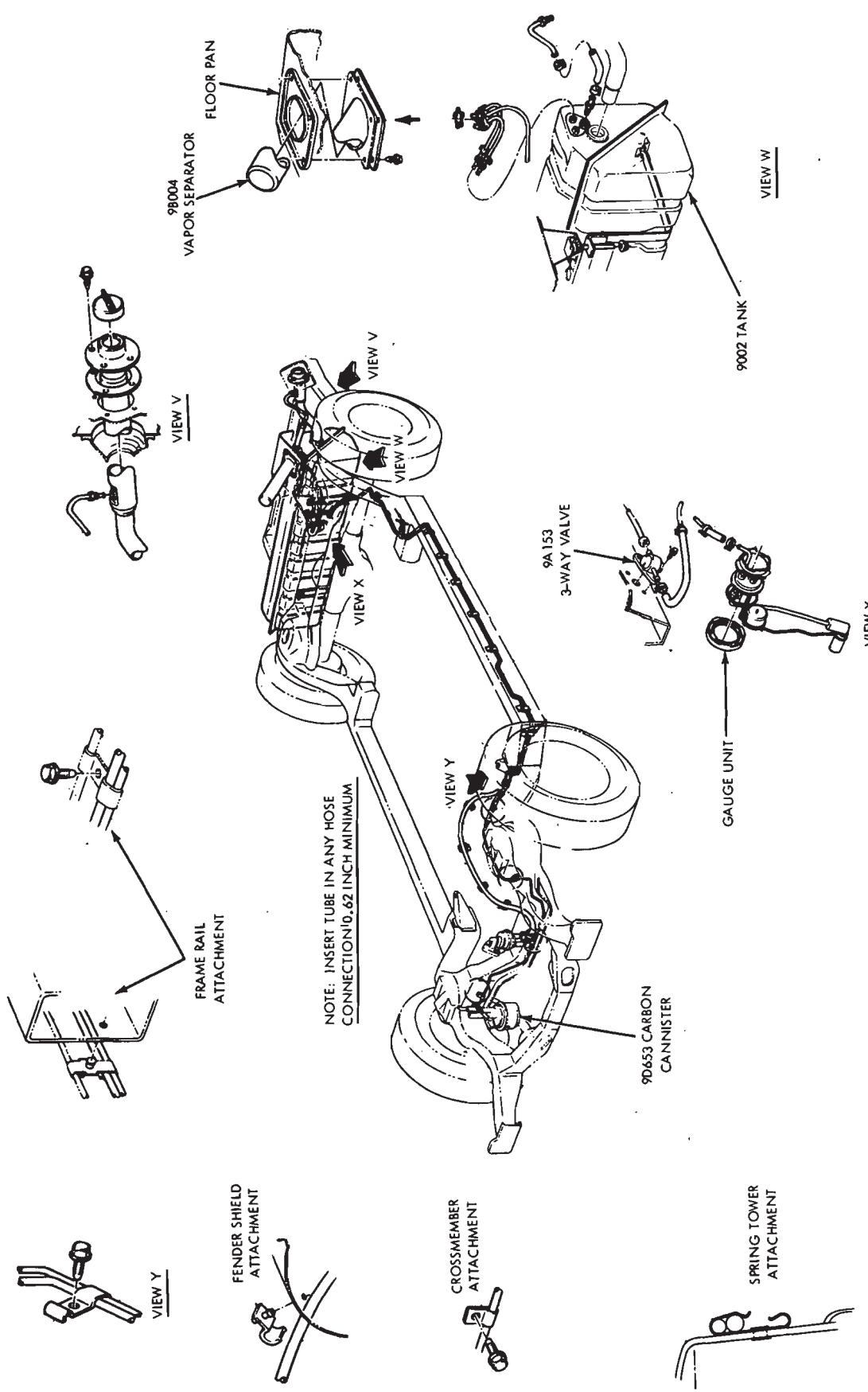


FIG. 9—Fuel Evaporative Emission Control System—Lincoln Continental

TYPICAL QUICK DISCONNECT CONNECTION
AT CONTROL VALVE 3-WAY VALVE

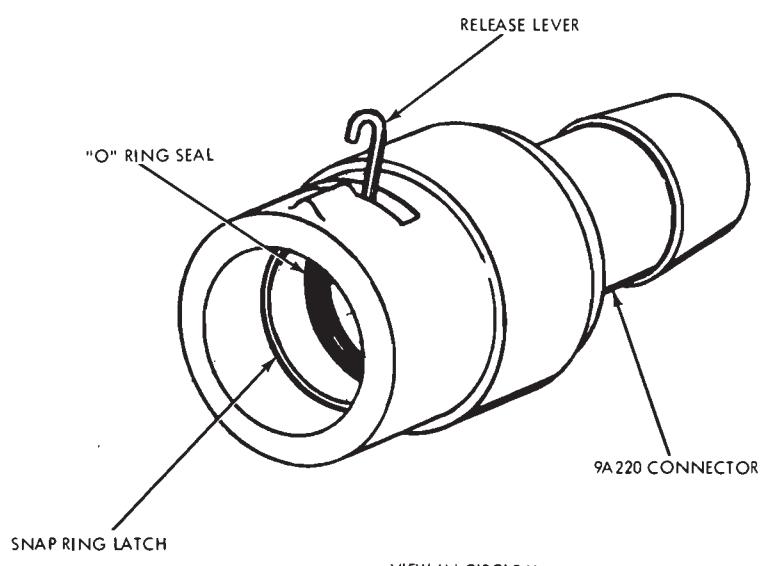
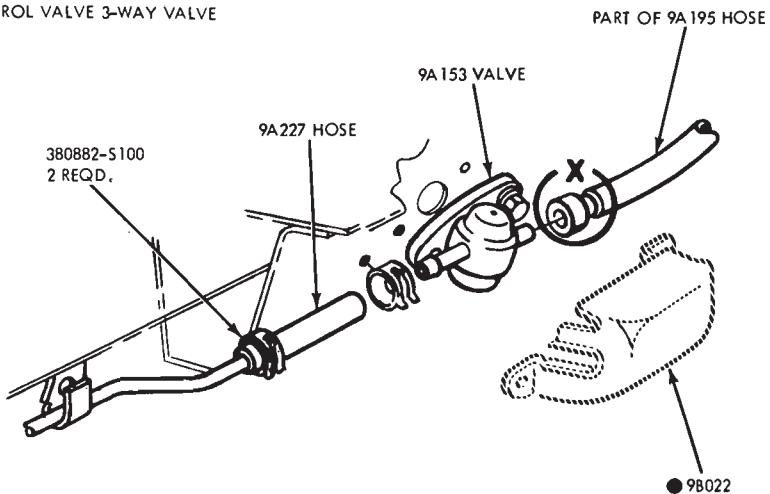


FIG. 10—Three-Way Vent Valve—All Models

PART 23-12 Throttle Linkage

COMPONENT INDEX	MODEL APPLICATION												
	All Models	Ford	Mercury	Meteor	Cougar	Fairlane	Falcon	Maverick	Montego	Mustang	Lincoln-Continental	Thunderbird	Continental-Mark III
ACCELERATOR CABLE													
Installation		12-02	12-02	12-02	12-03	12-03		12-03	12-03	12-03	12-02	12-02	12-02
Removal		12-02	12-02	12-02	12-03	12-03		12-03	12-03	12-03	12-02	12-02	12-02
ACCELERATOR CABLE BRACKET													
Installation	12-02												
Removal	12-02												
ACCELERATOR CONTROL ROD								12-03					
Installation								12-03					
Removal								12-03					
ACCELERATOR PEDAL													
Height Adjustment		12-01	12-01	12-01	12-02	12-02	12-01	12-02	12-02	12-02	12-01	12-02	12-02
Installation	12-03												
Removal	12-03												
DOWNSHIFT LINKAGE													
Adjustment		12-01	12-01	12-01	12-02	12-02	12-01	12-02	12-02	12-02	12-01	12-02	12-02

Numbers in the vertical column show page location.

1 LINKAGE ADJUSTMENTS

The engine curb idle speed must be adjusted to specifications before performing throttle and/or downshift linkage adjustments. Refer to Part 23-01 of this Group for the recommended procedure.

FORD, LINCOLN CONTINENTAL, MERCURY AND METEOR

ACCELERATOR PEDAL HEIGHT

On all engines, the conduit covering the accelerator cable at the carburetor end must be evenly nested between the clamp and the accelerator shaft bracket (Fig. 1). Due to the fixed clamping of the cable conduit, accelerator pedal height adjustment is not required.

DOWNSHIFT LINKAGE—AUTOMATIC TRANSMISSION

1. Disconnect the downshift lever return spring (Fig. 1). Hold the throttle shaft lever in the wide open position, and hold the downshift rod against the through detent stop. Adjust the downshift screw to provide

0.050-0.070 clearance between the screw and the throttle shaft lever. On the 240 CID engine, tighten the locknut to maintain the screw position. End play adjustment is not required.

2. Connect the downshift lever return spring. The accelerator return spring is connected between the carburetor and accelerator shaft bracket as shown in Fig. 1.

FALCON SIX AND V-8

ACCELERATOR PEDAL HEIGHT

1. With the engine stopped, make sure the carburetor choke plate is fully opened and the throttle plate(s) is closed. Be sure the fast idle cam is not contacting the fast idle screw.

2. Check the accelerator pedal for the specified idle height (Fig. 2). Make sure the floor mat is properly positioned when performing this operation.

3. If the pedal height requires adjustment, disconnect the accelerator retracting spring at the accelerator shaft or bellcrank (if so equipped). Disconnect the accelerator shaft at the carburetor throttle lever or accel-

erator bellcrank lever, if so equipped.

4. With the throttle plate(s) closed, lengthen or shorten the assembled length of the accelerator shaft to bellcrank rod to obtain the accelerator pedal specified height.

5. Install the retaining clip and connect the accelerator shaft to bellcrank rod at the carburetor throttle lever or accelerator bellcrank lever, if so equipped. Make sure the clip is properly seated. Install the accelerator retracting spring.

DOWNSHIFT LINKAGE—AUTOMATIC TRANSMISSION

1. With the engine off, check the accelerator pedal height (Fig. 2).

2. Disconnect the downshift control cable from the accelerator shaft lever.

3. With the carburetor choke fully open, depress the accelerator pedal to the floor. Block the pedal to hold it in the wide open throttle position.

4. Rotate the downshift lever counterclockwise to place it against the internal stop.

5. With the lever held against the stop position, and all slack removed from the cable, adjust the trunnion so

that it will slide into the accelerator shaft lever. Turn the trunnion one to two additional turns clockwise to increase the cable length, then secure it to the lever with the retaining clip.

6. Remove the block to release the accelerator linkage.

COUGAR, FAIRLANE, MAVERICK, MONTEGO AND MUSTANG

ACCELERATOR PEDAL HEIGHT

Due to fixed installation of the cable conduit, accelerator pedal height adjustment is not required.

DOWNSHIFT LINKAGE—AUTOMATIC TRANSMISSION

Six-Cylinder Engines

The throttle and downshift linkages are shown in Figs. 3 and 5.

1. Disconnect the throttle return spring.

2. Remove the trunnion and cable at bellcrank.

3. Hold the transmission in full downshift against stop.

4. Hold the carburetor throttle lever wide-open throttle against stop.

5. Adjust trunnion at the bellcrank until the ball stud on shaft and the ball stud receiver on cable align, then turn the trunnion one full additional turn to increase the length.

6. Release the transmission and carburetor to the normal free position.

7. Install the throttle return spring.

V-8 Engines

The throttle and downshift linkages are shown in Fig. 4.

1. Disconnect the throttle and downshift return springs.

2. Hold the carburetor throttle lever in wide-open position against stop.

3. Hold the transmission in full downshift position against internal stop.

4. Turn adjustment screw on the carburetor kickdown lever to within 0.040 to 0.080 gap of contacting pick-up surface of carburetor throttle lever.

5. Release the transmission and carburetor to the normal free position.

6. Install the throttle and downshift return springs.

THUNDERBIRD AND CONTINENTAL MARK III

The throttle and transmission kick down linkage is shown in Fig. 6.

THROTTLE LINKAGE

The conduit covering the accelerator cable at the carburetor end must be evenly nested between the clamp and the accelerator shaft bracket. Due to the fixed clamping of the cable conduit, accelerator pedal height adjustment is not required.

DOWNSHIFT LINKAGE

1. Disconnect the downshift lever return spring. Hold the throttle shaft lever in the wide open position, and hold the downshift rod against the through detent stop. Adjust the downshift screw to provide 0.050-0.070 clearance between the screw and the throttle shaft lever. End play adjustment is not required.

2. Connect the downshift lever return spring.

2 THROTTLE LINKAGE REPAIR

Refer to the illustrations in this Group for views of the various throttle linkages.

FORD, LINCOLN CONTINENTAL MARK III, MERCURY, METEOR AND THUNDERBIRD

ACCELERATOR CABLE

Removal

Refer to Figs. 1 and 6.

1. Remove the air cleaner assembly.

2. Remove the hairpin clip from the clevis pin attaching the accelerator cable to the accelerator pedal shaft. Remove the pin and separate the end of the cable from the pedal shaft.

3. Remove the screw securing the accelerator cable assembly to the dash panel.

4. Loosen the accelerator cable clip bolt and remove the cable assembly from the clip assembly.

5. Disconnect the accelerator cable snap-on fitting from the carburetor throttle lever ball stud.

6. Remove the accelerator cable assembly from the vehicle.

Installation

1. Position the new accelerator cable through the outside opening in the dash panel. Connect the cable to the accelerator pedal shaft with the clevis pin and hairpin clip.

2. Secure the accelerator cable housing to the dash panel with the retaining screw. Apply vehicle body sealer, as required, to the outside edges of the cable housing mounting flange, to seal the dash panel opening. **Do not get sealer on the cable.**

3. Position the accelerator cable assembly in the clip and bracket assembly and tighten the retaining clip bolt.

4. Connect the accelerator cable snap-on fitting to the carburetor throttle lever ball stud.

5. Install the air cleaner assembly.

ACCELERATOR CABLE MOUNTING BRACKET

Removal

1. Loosen the accelerator cable mounting bracket clip retaining bolt. Remove the cable from the clip assembly.

2. Disconnect the return spring from the carburetor and the accelerator cable mounting bracket.

3. Remove the retaining bolts securing the accelerator cable and mounting bracket to the intake manifold.

Installation

1. Install the accelerator cable mounting bracket on the intake manifold and torque the retaining bolts to specification.

2. Position the accelerator cable in the mounting bracket and add the

clip, but do not tighten the clip retaining bolt.

3. Connect the return spring to the carburetor and the accelerator cable mounting bracket.

ACCELERATOR PEDAL SHAFT OR PEDAL

Removal

1. Remove the hairpin clip from the clevis pin attaching the accelerator cable to the accelerator pedal shaft. Remove the clevis pin and separate the cable from the shaft.

2. Remove the retaining clips from the accelerator pedal shaft. Remove the pedal shaft assembly and two nylon bushings from the bracket.

3. If it is necessary to remove the accelerator pedal, remove the two retaining clips from the accelerator pedal pivot pin. Remove the pedal, spring and the two nylon bushings.

4. If the vehicle is equipped with a pedal pad cover, uncrimp the pedal pad cover retaining tabs. Remove the pedal pad and cover.

Installation

1. Position the pedal pad on the accelerator pedal. Install the cover, if so equipped, and carefully crimp the retaining tabs to prevent distortion of the tabs and movement of the pad on the pedal.

2. Install the two nylon bushings, pedal spring, pin and the pin retaining clips on the accelerator pedal shaft.

3. Install the two nylon bushings, accelerator pedal shaft, pivot pin and the two retainers on the accelerator pedal shaft mounting bracket on the dash panel.

4. Position the accelerator cable in the accelerator pedal shaft and install the clevis pin through the cable and shaft. Install the hairpin clip.

ACCELERATOR CONTROL SHAFT ROD OR ACCELERATOR BELLCRANK TO CARBURETOR ROD

Removal

1. Remove the accelerator retracting spring and return spring (if so equipped).

2. Disconnect and remove the accelerator control shaft rod or accelerator bellcrank to carburetor rod.

3. Lubricate the accelerator control shaft rod or accelerator bellcrank to carburetor rod hinge point(s) with the specified lubricant (Refer to the 1970 Ford Car Maintenance and Lubrication Manual).

Installation

1. Install the accelerator control shaft rod or bellcrank to carburetor rod. If the accelerator control shaft or bellcrank to carburetor rod is equipped with ball retaining clips, make sure the clips are properly seated over the ball.

2. Install the accelerator retracting

spring and return spring (if so equipped).

3. Check the accelerator pedal for the specified idle height and adjust the throttle linkage, if required.

COUGAR, FAIRLANE, MAVERICK, MONTEGO AND MUSTANG

ACCELERATOR CABLE

Removal

Refer to Figs. 3, 4 and 5.

1. Disconnect the accelerator return spring.

2. Disconnect the accelerator cable at the carburetor throttle lever.

3. Squeeze the retaining clip and slide the cable housing out of the bracket at the carburetor.

4. Squeeze the retaining clip on the pedal end of the cable and remove the cable from the accelerator pedal.

5. Remove the cable and grommet from the dash.

Installation

1. Position the cable end through the dash and install the grommet.

2. Squeeze the retainer and install the cable end in the accelerator pedal.

3. Thread the cable through the bracket on the carburetor, squeeze the retainer and install on the bracket.

4. Connect the cable to the carburetor throttle lever.

5. Connect the accelerator return spring.

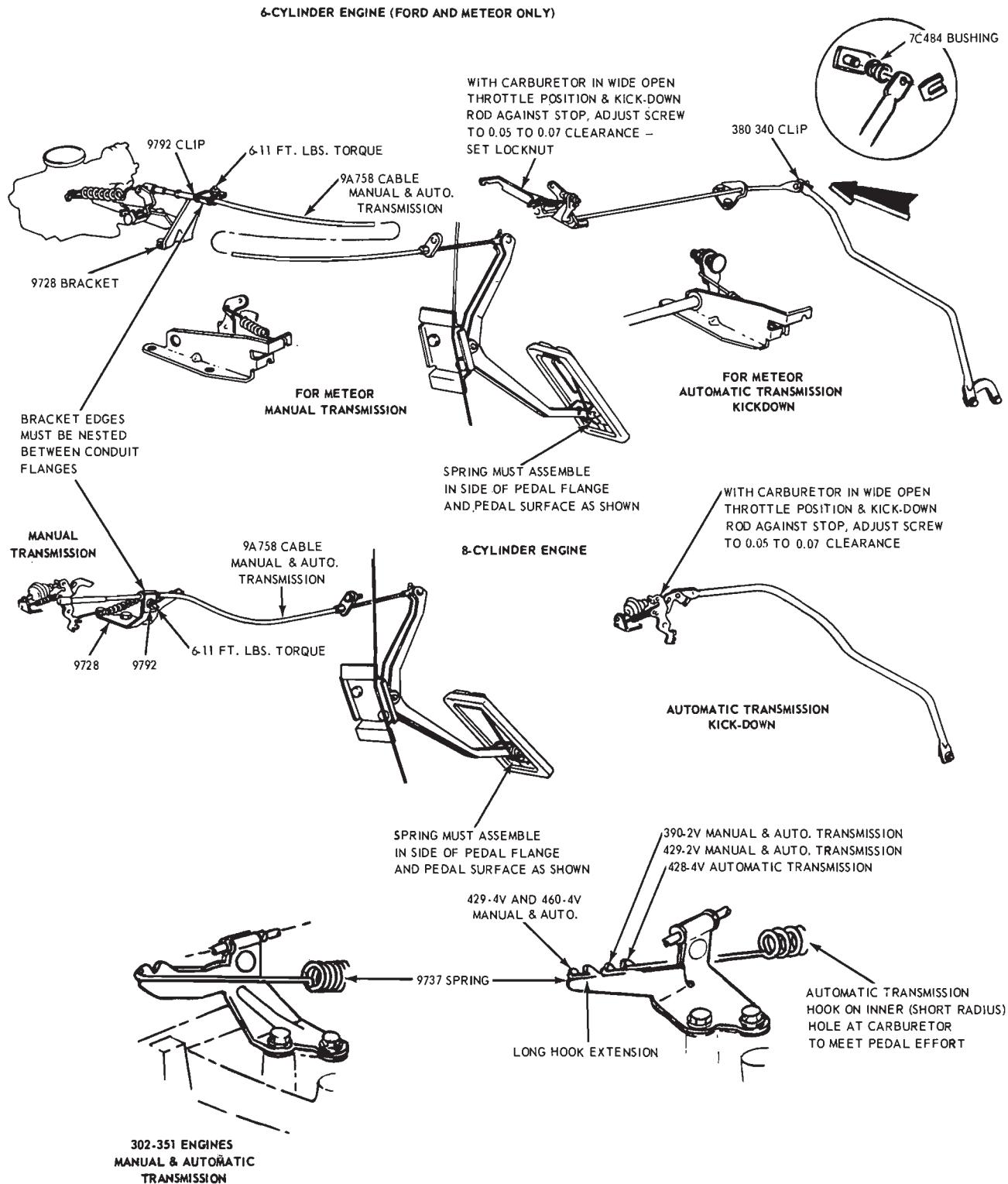
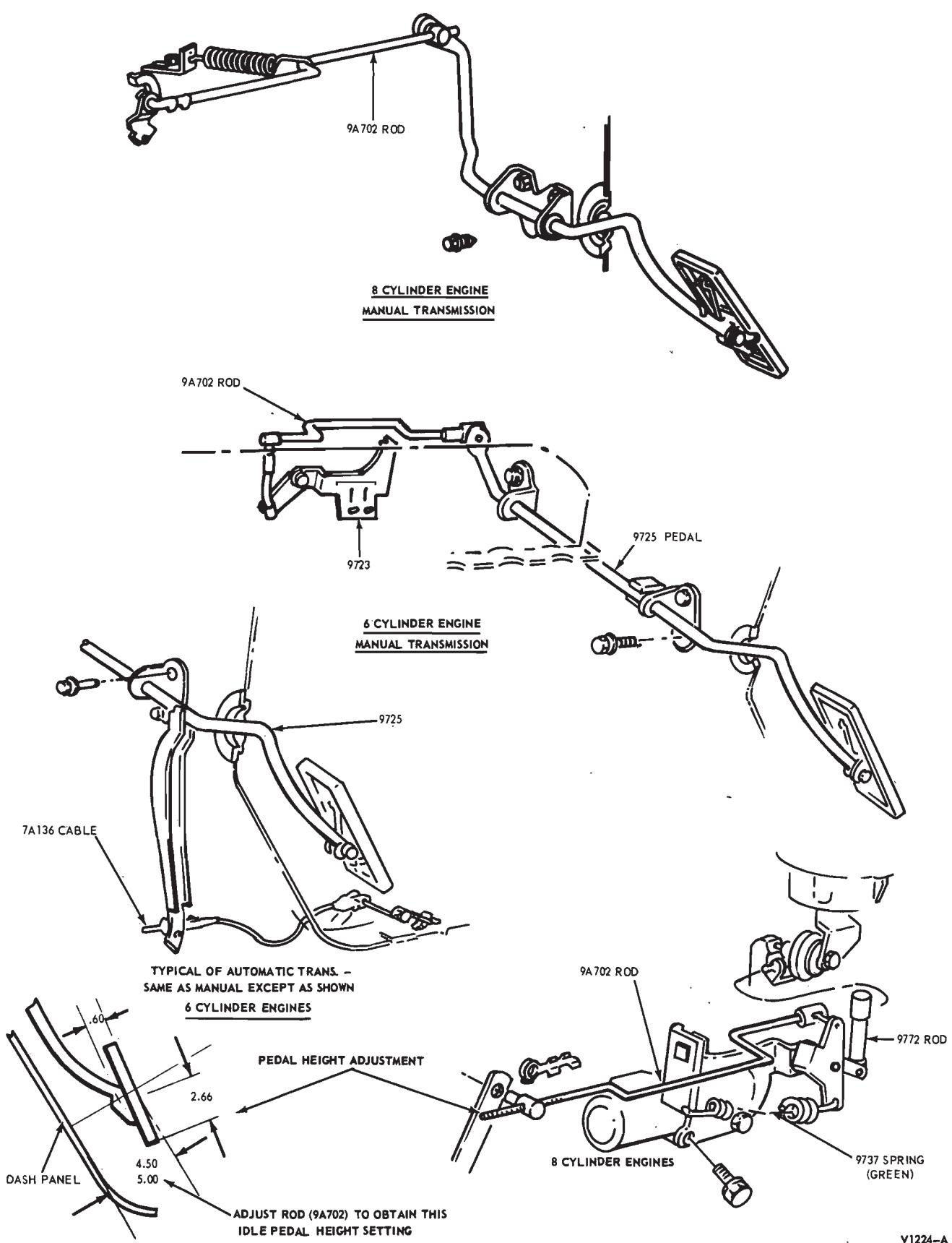


FIG. 1—Throttle and Downshift Linkage—Ford, Lincoln Continental, Mercury and Meteor



V1224-A

FIG. 2—Throttle and Downshift Linkage—Falcon Six and V-8

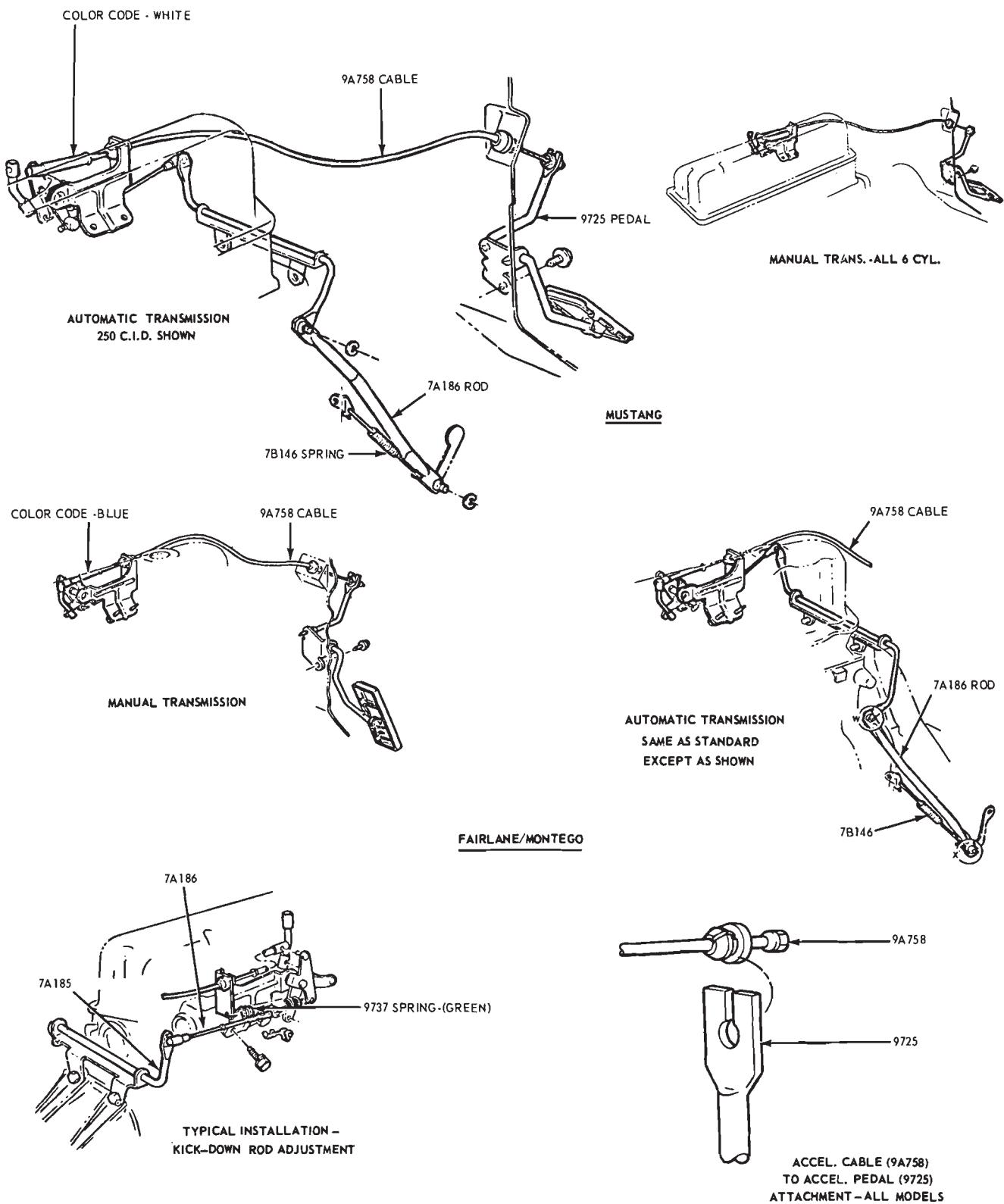
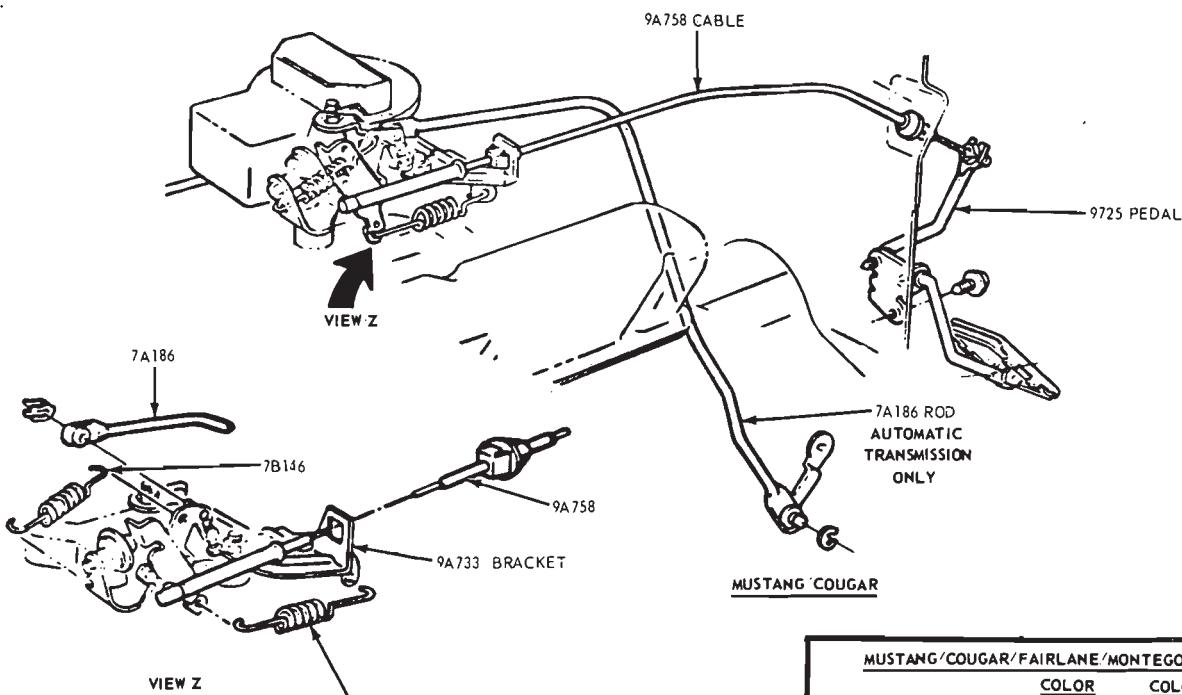
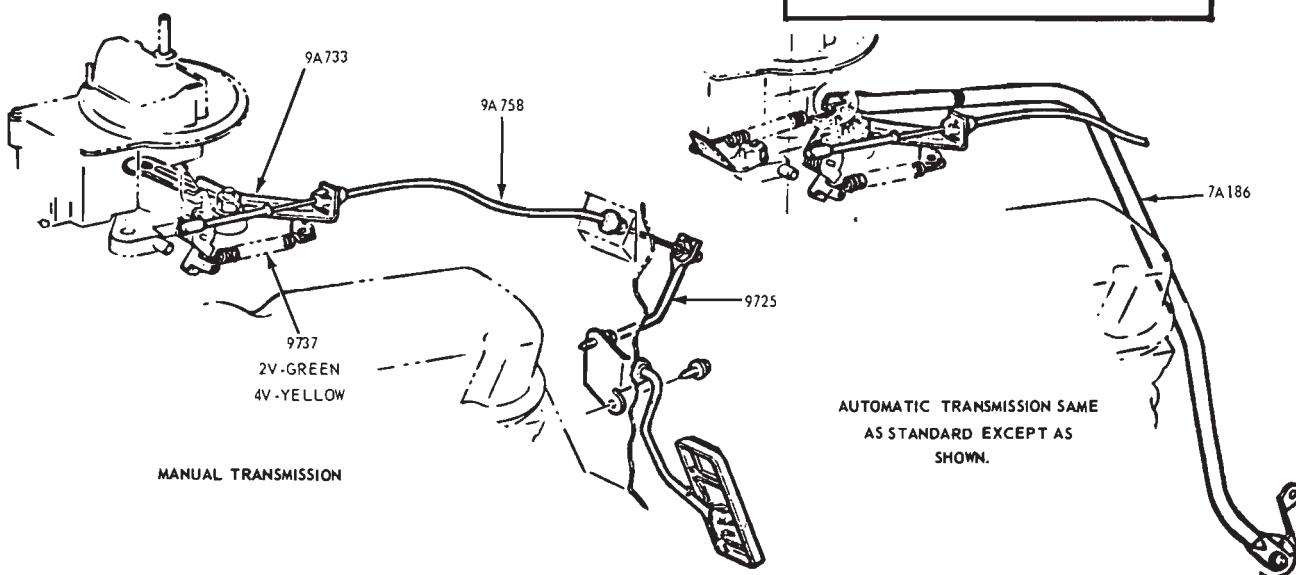


FIG. 3—Throttle and Downshift Linkage—Cougar, Fairlane, Montego and Mustang—Six Cylinder



<u>MUSTANG COUGAR/FAIRLANE/MONTEGO</u>			
<u>ENG.</u>	<u>TRANS.</u>	<u>COLOR CODE</u>	<u>COLOR STRIP</u>
302-2V	C-4	GOLD	BROWN
351-2V	C-4	GOLD	WHITE
351-2V	FMX	GOLD	RED
351-4V	FMX	GOLD	BLUE
428-4V	C-6	GOLD	GREEN
429-4V	C-6	GOLD	BLACK
429-CJ	C-6	GOLD	VIOLET



FAIRLANE/MONTEGO

V1223-A

FIG. 4—Throttle and Downshift Linkage—Cougar, Fairlane, Montego and Mustang—8 Cylinder

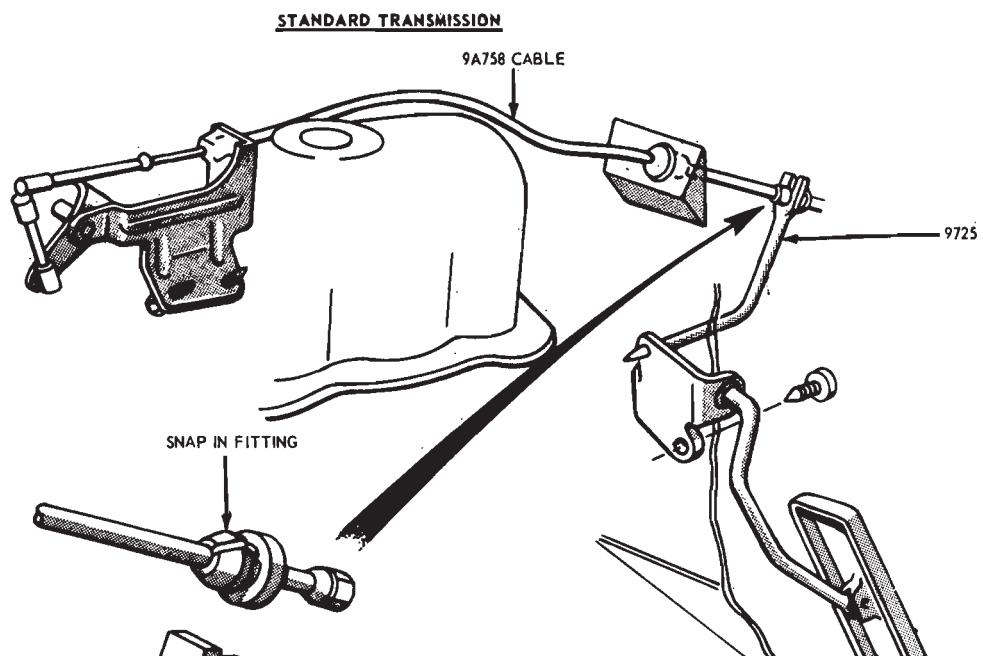
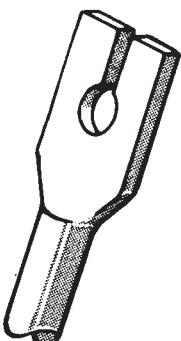
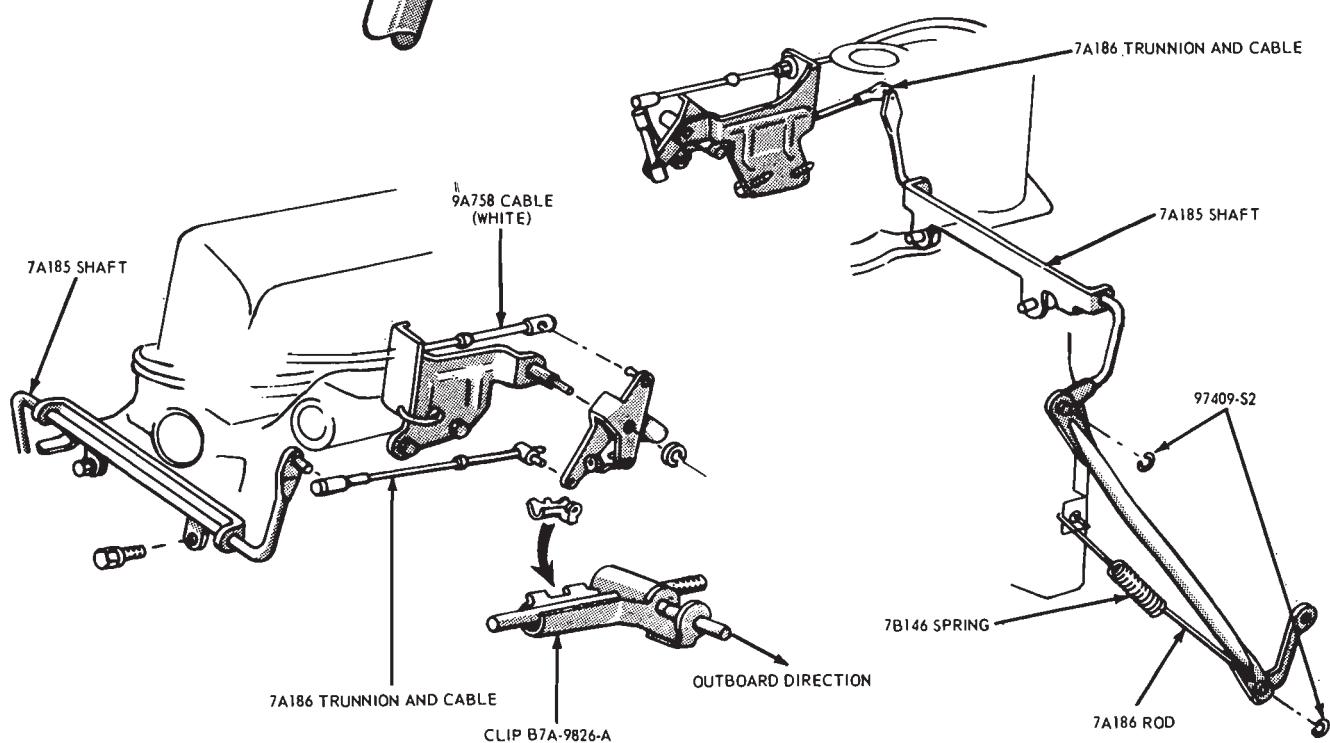
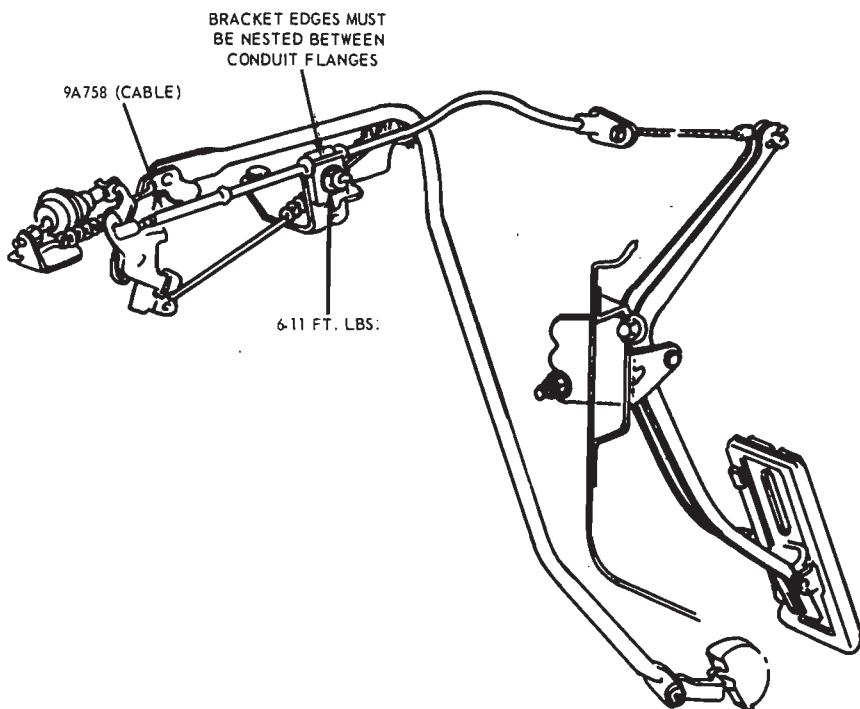
MAVERICK CABLE INSTALLATIONAUTOMATIC TRANSMISSION

FIG. 5—Throttle and Downshift Linkage—Maverick



V 1146-A

FIG. 6—Throttle and Downshift Linkage—Thunderbird and Continental
Mark III